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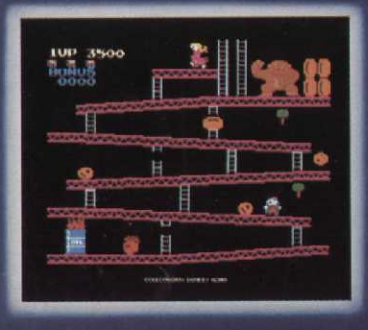

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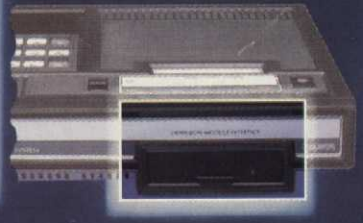

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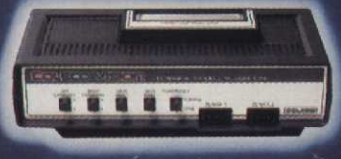

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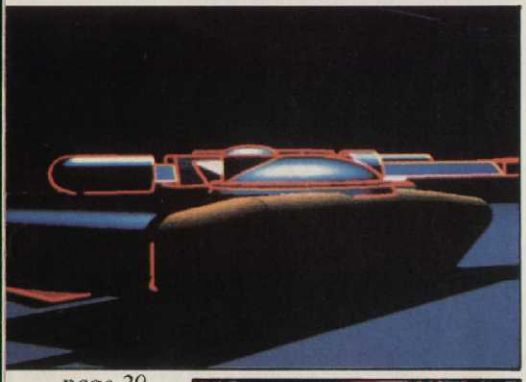
VIDEO GAMES

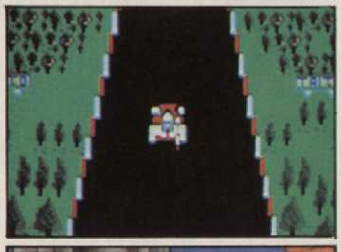
Volume 1, Number 2 October 1982

page 54

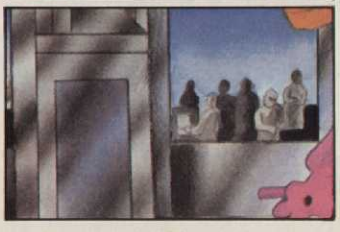


page 29

page 53



page 61



page 15

FEATURES

VIDEO GAMES Interview: Tim Skelly 20
One of a growing list of unmasked, eager-to-talk game designers, Skelly's topics include his recent game Reactor, his days at Cinematronics and theta wave meditation. Interview by Neil Tesser.

Video Games Go to the Movies 24
Tron and *Starblasters* are sure-fire evidence of Hollywood's latest love affair. Sue Adamo files a report.

The Art of Video Games 30
How do all those pretty pictures get on to the video screen? Bob Mecoy provides some answers and also takes a revealing peek into the future.

Coleco Has a Vision—Better Games for All 52
What's in a name? Steve Bloom examines the past, present and immediate future of this extremely ambitious toy manufacturer.

SPECIAL SECTION

ROGER DIONNE'S *A BUYER'S GUIDE TO HOME VIDEO GAMES* 35
Dionne dissects 19 of the most popular and/or up-and-coming cartridges, including Defender, Star Strike and The Quest for the Rings. Adapted from the Banbury book.

DEPARTMENTS

HYPERSPACE 9
A few words of hype from the editor.

DOUBLE SPEAK 11
Some words of advice from our readers.

BLIPS 14
Death of a gamer, Applefest reviewed, new software on the block, Apollo's story, the latest legal news, last call for computer camp.

DR. VIDEO 56
Ever wonder what all that game playing is doing to your eyes? Our resident optometrist, Dr. Arnold Sherman, has.

BOOK BEAT 59
John "Hey Buddy! Can You Spare a Quarter?" Holmstrom can't stand all those "beat-the-games" books. Can you?

COIN-OP SHOP 61
Nobody reviews 'em better than Eugene "Defender/Stargate/Robotron" Jarvis. Everyone's favorite game designer takes a look at Turbo, Zaxxon, Dig Dug, Robby Roto and Grand Champion.

HARD SELL 64
Got $300? Wanna blow it on a TV-game system? Roger Dionne narrows your choice down to Intellivision and Astrocade.

COMIC RELIEF 69
Vidiosyncratic views of arcade life from Matt Howarth, Lou Stathis, Peter Bagge and John Holmstrom (again?). Illustrated

OUTTAKES 82

Cover illustration by Stanislaw Fernandes

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PRESENTS

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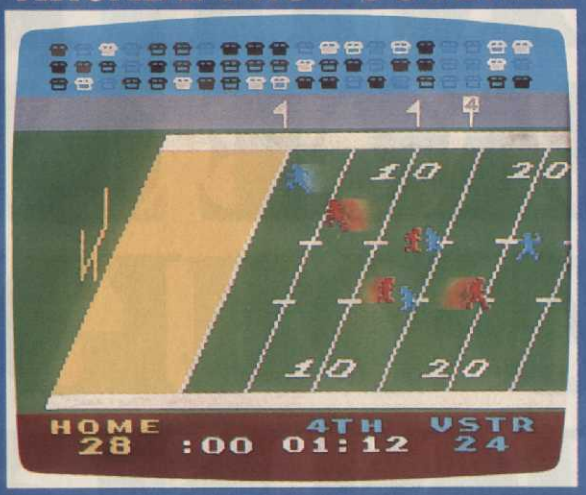

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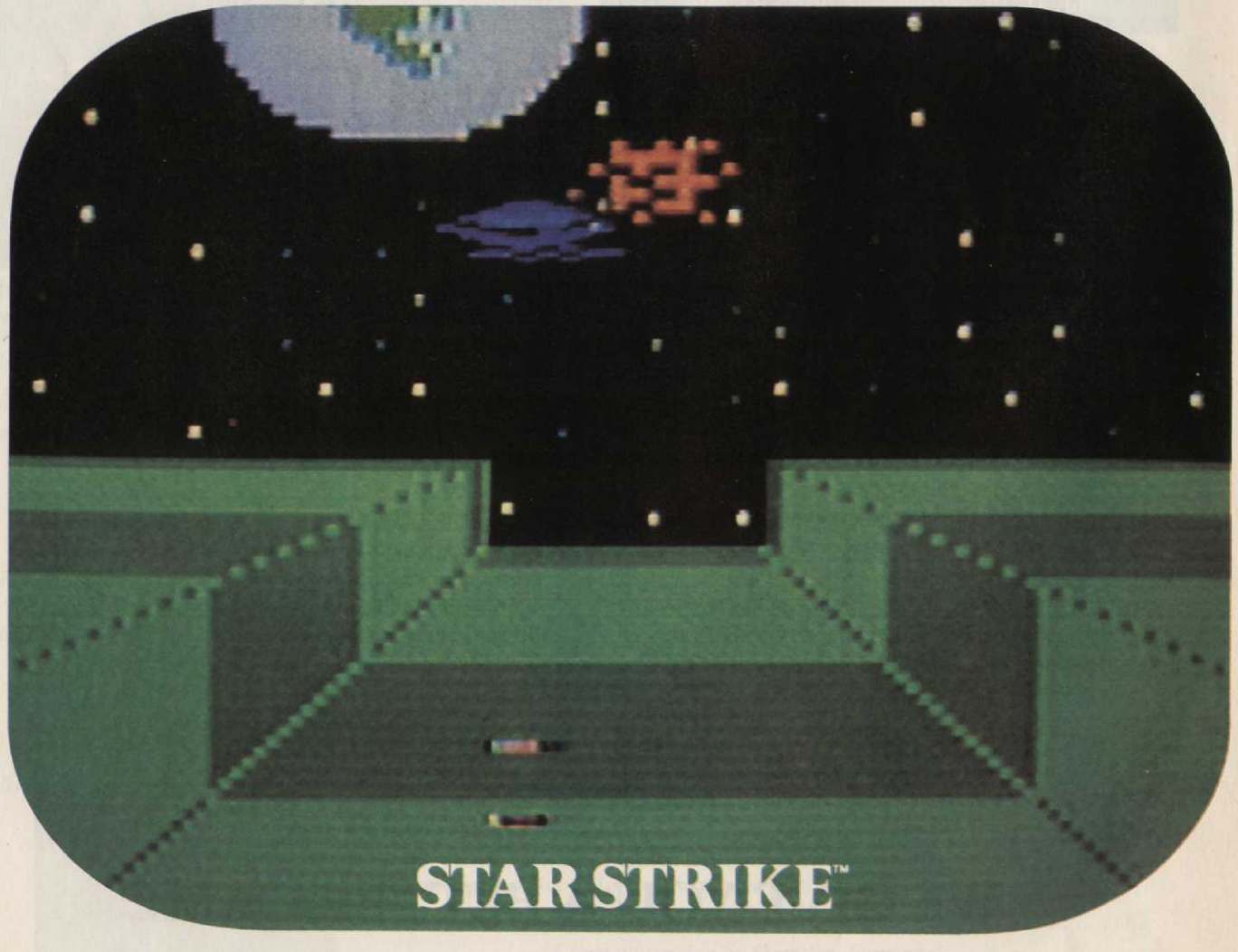

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HYPERSPACE

Those of us in the press who have become full-fledged followers of the video game free-for-all are continually being made to feel that our new-found livelihood is sure to have about as much longevity as a beginner's first bout with Defender. Industry optimists notwithstanding, the Wall Street doomsayers have been having a field day of late. Peering through tortoise-shell glasses into their crystal balls, all they can see is one corporate corpse after the next smoldering like fallen asteroids in video game heaven. No doubt, with the ridiculous number of new companies suddenly reaching for video's brass ring, there are bound to be several casualities on the horizon. Yet, why should this wealth of competition spell disaster for those companies that *do* know what they're doing?

Again, this brings us back to the to-be-perfectly-honest-I-think-this-all-is-a-fad-theory. If you are wont to believe video games are nothing more than devilishly powerful drugs that have to wear off sometime soon, be my ghost. We at *VIDEO GAMES* think otherwise. In fact, we're so confident about this industry's vitality that we've devoted most of Issue Two to its future.

"Video Graphics Explosion!" screams the cover; clearly, graphics are where the games' future is at. Look at Turbo and Zaxxon, two fantastically attractive games presently tearing up the arcades. Are they really that different from racing and space games of the past, or is their appeal simply visual? The reviews in Coin-Op Shop (pp. 61-63) and the feature story, "The Art of Video Games" (pp. 30-33), should provide some answers.

Meanwhile, "Video Games Are Going to the Movies" says the article beginning on page 24. After years of skepticism, Hollywood has finally agreed that movie houses *are* big enough for the both of them, meaning films *and* video games. The first experiment in this virgin territory is Disney's *Tron*, and will be followed by *Spaceblasters*. Again, graphics is the real story here, for *Tron* is almost entirely computer-animated.

Finally, there is ColecoVision. In the beginning, there was Atari's Video Computer System, then Mattel's Intellivision, now along comes ColecoVision, touted as the latest and greatest of the programmable TV-game systems. Will it live up to its own hard sell? Coleco's president Arnold Greenberg thinks so and tells you why in an interview starting on page 52.

For Issue Two, we've exhaustingly searched for writers capable of both informing and captivating readers with their prose. We think we've found them. Authors Roger Dionne (his *A Buyer's Guide to Home Video Games* will be published by Banbury Books in September) and Stephen Kiesling (his *The Shell Game* by Morrow is already out), editors Sue Adamo (managing editor at *Starlog*), Bob Mecoy (Dell Publishing) and Randi Hacker (associate editor at *Consumer Electronics Monthly*), and just plain old freelancers like Neil Tesser (Chicago's *The Reader*) contributed expertly.

Three other freelancers whose work is buried herein also deserve mention. Writer/cartoonist John Holmstrom, who drew raves for "Hey, Buddy! Can You Spare A Quarter?" in Issue One, returns with a new character named Bernie (page 72), plus his thoughts on those "!#%!!" video game books (pp. 58-59). And if you are as opinionated as the next guy, then you'll probably enjoy Eugene Jarvis' acerbic comments about the new crop of coin-op videos. This is certainly a departure for Jarvis—usually he's busy designing games like Defender and Robotron, not writing about them. Lastly, we present the case of Stanislaw Fernandes, for it is his artwork that has adorned our first two covers. Enjoy!

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Double Speak

Who's on First?

I really enjoyed your magazine. Being an owner of a video arcade and retail outlet for Atari, Intellivision, etc., I found many interesting sections in your first issue.

I think it would be a good idea to have a letter section and perhaps a high score section. For example on page 14 ("Four Score and Seven Billion Points Ago . . .), you have high scores that probably aren't accurate. I know that on May 19, 1982, Tony Barone scored 589,516 on Tempest. I'm sure other store and arcade owners have similar stories to tell.

Peter Mengo
Elizabeth, NJ

The Defender score quoted in the article [33,000,013,200] is ridiculous! I have played this machine both here and in Europe and a good player can rack up one million points every 45 minutes to an hour. Rick Smith [said top scorer] would need to stand at the game for two years and ten months to get the score quoted or score 11.5 million per minute to do it in two days. Rick Smith most likely scored 33 *million.*

I would like to claim the Defender top score of 30,000,555. If 33 million is the record, I am going to attempt 40 million some time this month. Would you like a report of the event?

Dale Rees
Cocoa Beach, FL

Definitely! By the way, you're right—the figure is 33 million, not billion. Sorry about that, chief. — Ed.

Thank you, Thank you

At last a magazine written for a video game fan of normal intelligence instead of for a burned-out junior high student! I predict this magazine will go a long way in improving the image of the whole video game and arcade industry. It is well-written and obviously well-researched, but still fun to read. I liked seeing the "higher class" ads from Pioneer, SF book club and others. Please don't degenerate into using the slang terms and excessive graphics that *Electronic Games* has—your magazine is far superior.

How about some info on the new ColecoVision coming out soon?

Robert L. Greenwald
Olmsted Falls, OH.

Thanks. You're wish is our command. See feature story about Coleco, starting on page 52.—Ed.

In All Seriousness

Having read your first issue, I would like to ask a question: Why in all the many magazines that I see on TV-games and home computers do I hardly find a mention of the Bally (now Astrocade) unit? The few articles that I did see were very brief and did not have much praise for it. I have had an Astrocade unit for two years and am thinking of buying the add-under Zgrass keyboard when Astrocade markets it, but now I wonder if I should change to the Atari 800. It seems so highly praised and advertised. I am mainly interested in TV-games and color graphics, although later I may want to use it as a home business computer.

Is the Astrocade a bastard in the TV-game/home computer market? If so, why? I would really like to hear from you before I decide what to buy.

Jack T. Rouse
Elkhart, IN

Your analysis of the Astrocade situation is accurate. Since Bally sold the system in 1980, Astro's marketing of the product has been exceedingly suspect. However, that seems to be changing (re: TV ad campaign). About which to buy, the Zgrass-32 or Atari's 800, I'd rather provide some specs and let you decide. Both computers include 16K RAM; the Zgrass expands to 64K, the 800 to 48K. The Zgrass includes 32K ROM, which contains its own programing language, as well as Basic; the 800 has 16K ROM with only Basic. Whereas the 800 offers double the screen resolution, the Zgrass displays twice the number of colors (256 to 128). Of course, the 800 has a wider selection of software. Both list for $599. The rest is up to you. Good luck.—Ed.

Ms. Pac-Fan

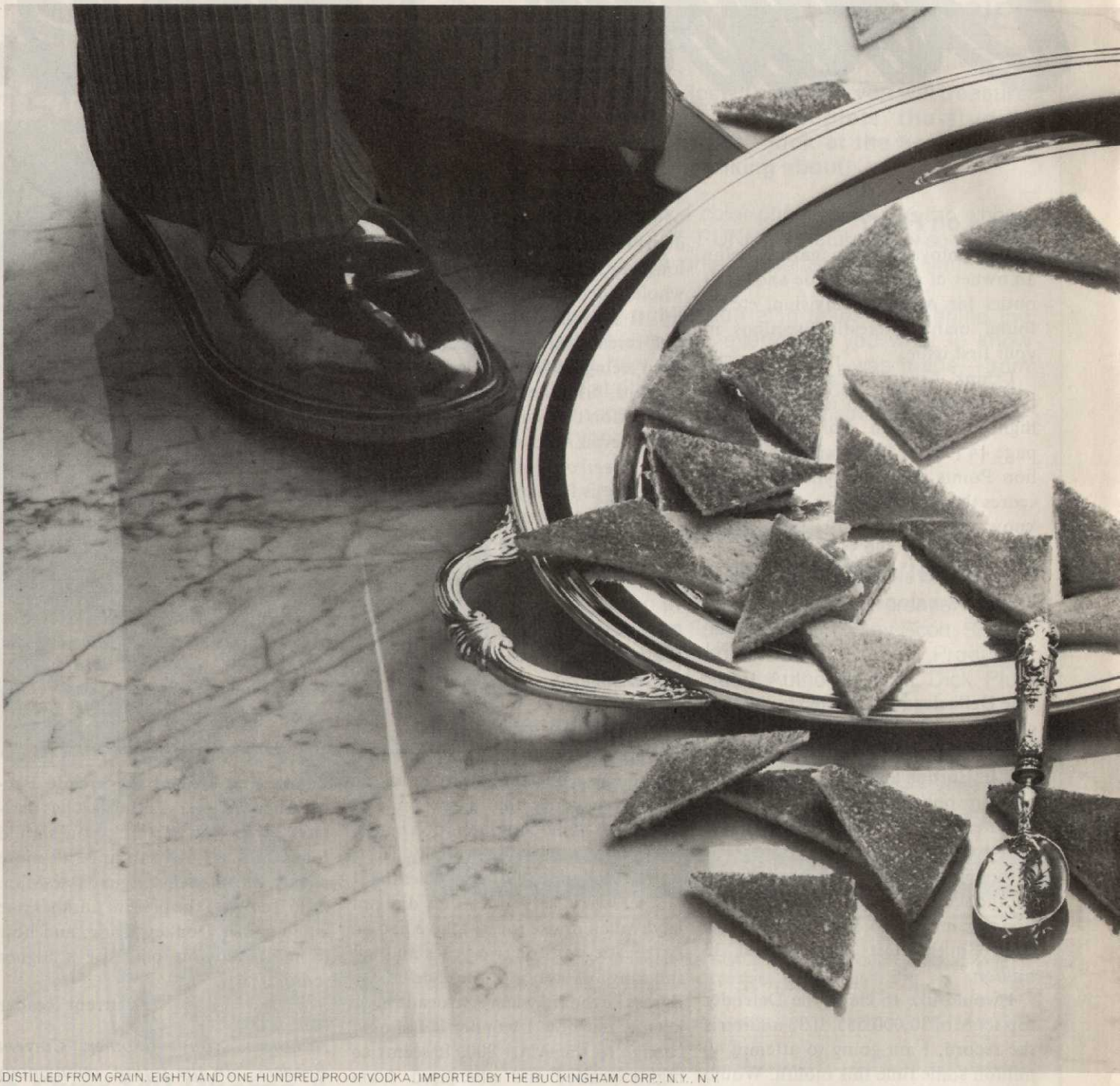
People are tired of the arcade Pac-Man because every enthusiast has mastered it by now. I think you should focus on Ms. Pac-Man since it's more challenging than the original Pac-Man. Also, focus on the present number one video game, Donkey Kong, and how to improve your play for a higher score.

Current Reader

A note to you and other "Current Readers." In the future, anonymous letters will not be printed in this section.—Ed.

Faux Pas In Issue One, on page 72, Mike Stroll, Williams' president was incorrectly called Mike Stoller. And on page 74, we labeled the Odyssey² game Freedom Fighters, UFO. Sorry about that.

"No madam, I didn't



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BLIPS

Death of a Video Gamer

Peter Burkowski had not been drinking when he arrived at Friar Tuck's Game Room in Calumet City, Illinois. He hadn't been using drugs either. According to the owner of Friar Tuck's, Peter and a friend walked in about 8:30 p.m. Saturday, April 3, and went straight to the games. Peter was eighteen, likeable, and apparently healthy. An "A" student, he had plans to become a doctor someday. Peter was also good with the games. In fifteen minutes of play, he wrote his initials at least twice in the "Top Ten" on the Berzerk screen. Then, tired of that game, he turned, took about four steps, dropped his quarter into a second machine, and collapsed. By 9 p.m. Peter was dead. The cause: heart attack.

The next day, one newspaper headline read, "Video Game Death." Was Peter, indeed, a casualty of the games? "Yes and no," says Mark Allen, Lake County's deputy coroner. Though the autopsy found unsuspected scar tissue on Peter's heart that was at least two weeks old, Allen believes, it's possible that the stress of the games triggered the attack in Peter's weakened heart.

"We certainly don't want to scare people away from video games," Allen explains. "Peter could have died in a number of stressful situations. We once had a boy who had a heart attack while studying for an exam. It just happened that he died in front of a video game, but it's also quite interesting."

After Peter's death, camera crews descended upon Friar Tuck's, filming the games (especially Berzerk) and interviewing players. "I don't like this kind of publicity," says the owner, Tom Blankly. "Peter's heart had a time bomb in it that just happened to go off here. I expected it to hurt business, but if anything, business has been up."

Profits aside, it turns out that video game playing is a lot more stressful than most people think. Next time you're in an arcade, take a few moments to watch the other players. Notice the twitches of concentration, the way some players' hands and feet shiver in excitement. Often, they pound the machines as if they were battling real invaders.

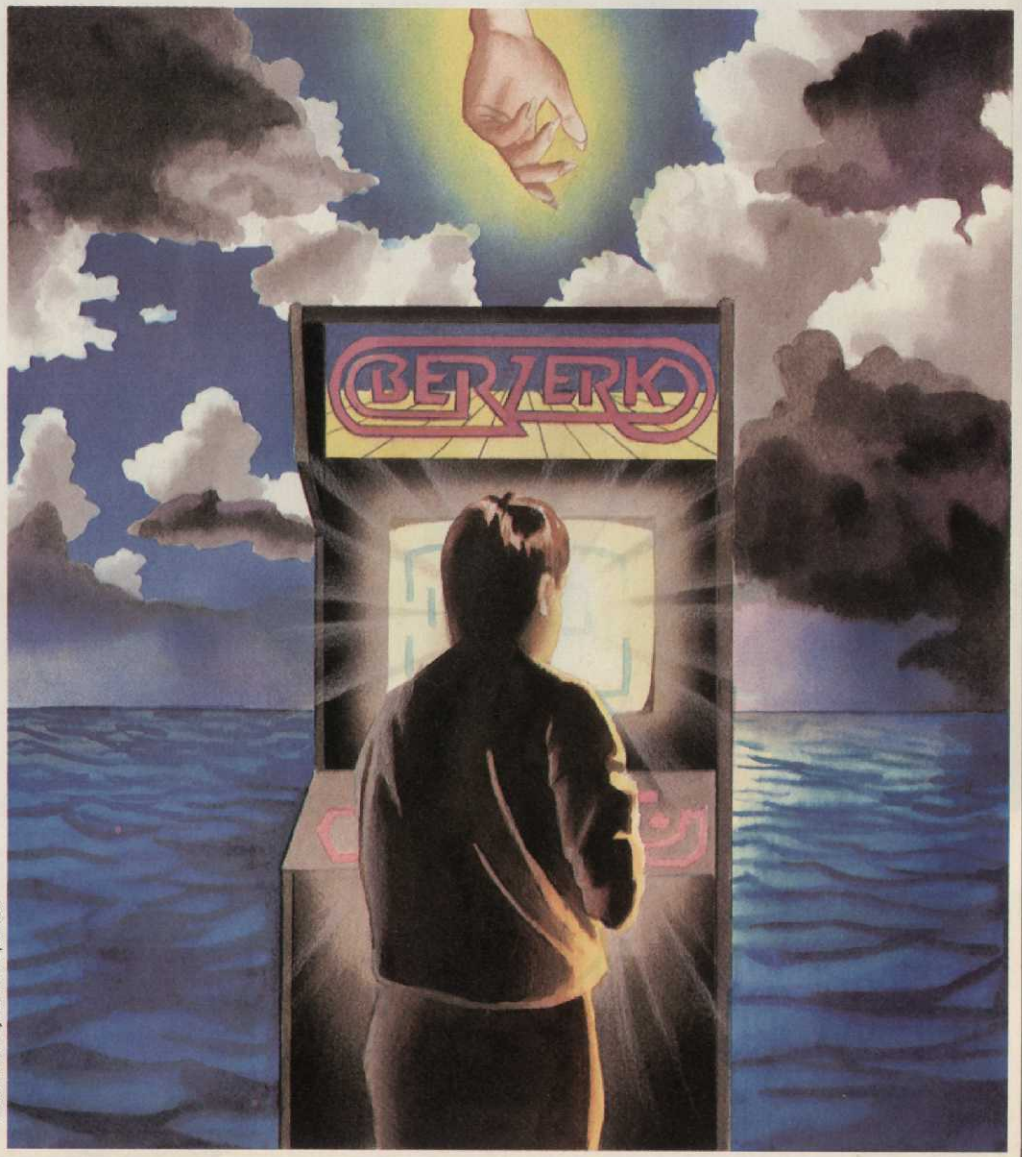

Illustration by Mark Caparosa

More than five years ago, cardiologist Robert S. Eliot, M.D. at the University of Nebraska Medical Center, noticed that same behavior in Pong players. Realizing that video games could be used in the lab to create the same stresses his cardiac patients face outside, he began monitoring the patients while they played the games. His findings (Eliot has charted over 1000 patients) are nothing less than startling. "We have had heart rate in creases of 60 beats per minute and blood pressures as high as 220 within one minute of starting a computer game. It happens quite a lot but the patients have no awareness."

According to Dr. Eliot, one out of three people have dramatic physiological reactions to mental stress. While not enough data has been compiled to determine whether video games are dangerous for these people, there is plenty of evidence to suggest that too much stress is connected to heart disease and hypertension. At this point, Dr. Eliot, who is being consulted on the case of Peter Burkowski, has no comment.

In any event, if you play the games to relax after a long day, think again. If you're a cardiac patient, you might want to stay at the bar. In Dr. Eliot's lab, he stops the game when a patient's blood pressure gets too high. Unfortunately, Peter Burkowski was never given this advice.

—Stephen Kiesling

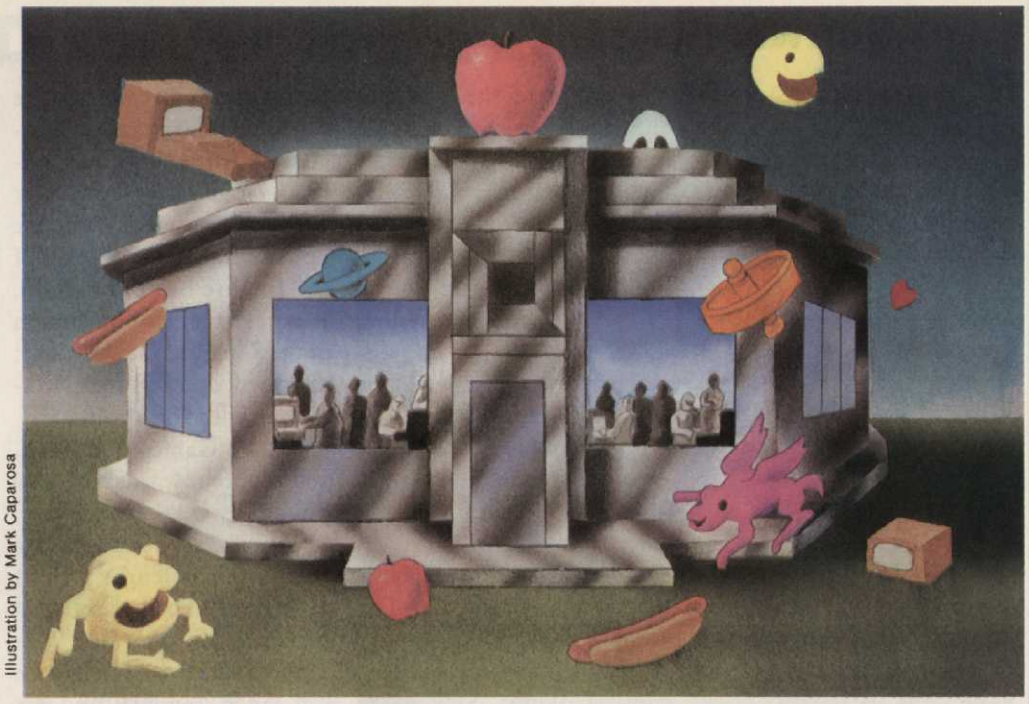

Illustration by Mark Caparosa

Due to th incredible response to Issue One's high score feature, *VIDEO GAMES* will be starting a national coin-op scoreboard in the December issue. If you are a high scorer or know someone who is—and can prove it—send us the following:

The name of the game and high scorer, the actual point total, the time it took to accomplish (to the minute), and how many breaks the player took. We need two typewritten statements from witnesses (one must be an arcade/shop owner or operator) on stationery—letterhead preferred.

Send all mail to: BEATING THE GAMES, Video Games magazine, 350 Fifth Ave., Suite 6204, NY, NY, 10118. The scores must arrive by Monday, Aug. 9. Please include a phone number for clarification purposes.

Review: Applefest Debuts in Boston

Computer lovers looking for a weekend bonanza, get ready. Applefest has hit the road. The series of three-day gatherings of Apple users and retailers premiered in Boston from May 14 to 16 and it was a blast. For anyone who is thinking of attending any of the subsequent A-fests—Minneapolis (Sept. 16-19), Houston (Nov. 19-21) and San Francisco (Dec. 3-5)—I have one word for you: Go!

At the Boston extravaganza, attendees discovered the latest advances in Apple peripherals and software, as well as the best prices to be found anywhere. Disks, for example, sold for as low as $1.75 at Eli Heffron & Sons' booth. Upstairs, seminars told about creating graphics, buying business software, using machine language, and much, much more. Downstairs, friendly and often fresh robots wandered about.

And, if you dared to rub shoulders with the much-maligned buccaneers of the airwaves, a Pirate's Fest set up shop just across the street for that purpose. There, I learned the latest pirating techniques, conversed with said pirates and even caught a glimpse of the grandaddy of all microcomputers—an IBM from the '40s that fit snugly into a briefcase.

Then, of course, there were games, games, games. After circling the floor twice, two major trends seemed apparent: First, and still foremost, was the continued converting of arcade hits to the home computer screen. In this department, Defender led the pack—at least eight new versions of this popular game surfaced at the fest. The best were Adventure International's Rear Guard and Piccadilly Software's Star Blaster.

Naturally, numerous Pac-Man spin-offs were on display, though none topped On-Line's Jaw Breakers and Datamost's Snack Attack, my previous personal favorites. Other conversions that grabbed my attention were Sab's Photar (a much-improved Centipede) and Sirius' Bandits (a near clone of Stratovox).

The second trend is adventure games. Once upon a time, adventures were all texts and no graphics. Now, Scott Adams' new hi-res adventures not only look great, but they talk to you. More than just a mere adventure, On-Line's Time Zone, which features 22 hi-res colors (14 more than usual) and over one million commands (on six disks, both sides), was already being called a classic by the crowds around the booth. Adventures have certainly come a long way.

If you own, are thinking of buying, or are just plain interested in computers—and live near the site of a future Applefest—don't miss it. At $5 a day or $15 for four, it's a regular bargain.

—E.A. Milkow

Software Update: Eight's Company

So, you think it's easy keeping track of all the new TV-game manufacturers that are crawling out of the woodwork lately on what seems a daily basis? Why, only last Wednesday two more surfaced, and yesterday another one showed its face (it was a slow day). Anyway, here's a list (check with us in about ten minutes) of companies and their cartridges that are either currently available or will soon be. All are for play on the Atari VCS only.

• **Arcadia Video Games.** Announced in April, the company plans to have four games and its Supercharger unit ready by August. What's unusual about all of this is that the games are recorded on cassette tapes ($14.95 each) and must be played back by first plugging the Supercharger ($69.95) into the VCS, then connecting it to a portable tape player. Not only are the cassettes cheaper, but the graphic resolution is of extremely high quality. Fireball, Suicide Mission, Communist Mutants from Space, Excalibur (not the film), and Phaser Patrol are Arcadia's initial game titles. The last game comes complete with the Supercharger.

• **CommaVid.** The Magic Card, a hobbyist's item which gives users access to the 6502 microcomputer inside the VCS, was CommaVid's first contribution to the TV-games milieu. Now, the firm has come forth with its debut cart, Cosmic Swarm—a combination of Asteroids and Centipede—and will follow shortly with Room of Doom.

• **Tiger Electronics.** Known primarily for hand-held videos, Tiger has suddenly begun to develop software. Its inaugural releases include Jawbreakers, the popular maze game purchased from On-Line Systems (makers of computer games); King Kong (rescue your sweetie from the top of the Empire State Building); River Patrol, a conversion of the Japanese arcade game; and two other games, Marauder and Threshold.

• **U.S. Games/Vid Tech.** The company was recently bought by Quaker Oats and, appropriately enough, its first cart challenges you to eat a bowl of cereal before it becomes soggy. (Just kidding.) Space Jockey has been out since January and six more games are expected by the year's end. So far we know that Word Zapper involves spelling in space; Sneak'n'Peak is video hide'n'seek for the pre-school crowd; and Towering Inferno features a burning building (bet you never would have guessed). Commander Raid and Missile Intercept are two of its other titles.

• **CBS Video Games.** Tired of seeing red on its TV and record ledgers, CBS is moving into video in a big way. The company has already made an exclusive four-year deal with Bally/Midway. Conversions of the arcade hits, Wizard of War and Gorf, will be available this Christmas, followed by Kick-Man, the Adventures of Robby Roto and Solar Fox.

• **Fox Video Game.** Like CBS, Twentieth Century-Fox (*Star Wars*) is branching out. Its first four carts, designed by the computer software firm, Sirius, should also be ready by Christmas. They are: Worm War I (self-explanatory), Deadly Duck (ducks vs. crabs), Beany Bopper (copters vs. oranges) and Fast Eddie (a pair of sneakers climbing Donkey Kong-style). Their next crop will be designed in-house.

• **Spectravision.** Just announced a minute ago, this company will be unveiling five carts in the fall. Gangster Alley (five thugs, including Scarface and the ubiquitous Lefty, in a maze); Tapeworm (you're an apple-eating worm); The China Syndrome (loosely based on the film, the action takes place inside a reactor); and two space games, Planet Control and Crossfire.

• **Thorn-EMI.** This venture's so new that Thorn has yet to decide on a name for its game division. What we do know is that five carts will be available soon. Cube Puzzle and Submarine Commander are two. Later on, the games will also come in cassette form for use on home computers.

That's it for now game fans. Wait a second—I've just been told by a reliable source that . . .

—Randi Hacker

What's New

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Profile: Apollo Shoots For the Moon

There may be hundreds of software companies in the video jungle, but only one creates educational filmstrips like "The Fascinating World of Geology" and cartridges for the Atari VCS as well. Games by Apollo, an outgrowth of National Career Consultants (NCC) in Richardson, Texas, has been in the games business for less than a year and, interestingly, is already outgrossing its 11-year-old parent company.

NCC and Apollo president Pat Roper remembers the precise minute he decided to push the company in a new direction. "It was October 9, 1981 at about 9:30 in the morning. I had played foot-

(Continued on page 18)

Disorder in the Court

Publications Int. v. Midway

Video games may be just what the doctor ordered for the beleagured world of book publishing. Everybody stopped buying Cube books months ago, most people have read more about sex than they ever wanted to know, and as far as whodunits, who cares? Well, as "beat-the-games books climb the bestseller lists and publishers count their cash, at least one manufacturer has decided to strike back.

Midway, the maker of Pac-Man and other arcade delights, began taking exception to all the "how-tos" after several had already sold hundreds of thousands of copies. In particular, the company approached Publications International Ltd. (PIL) and Simon & Schuster *(How to Win at Pac-Man)* and Warner Books *(How to Play Pac-Man)*, asking for a percentage of each book's gross. Warner agreed, PIL and S & S didn't. After Midway threatened to sue for infringement of copyright and trademark, PIL filed a declaratory judgement action versus Midway in the U.S. District Court in Chicago. Midway quickly responded by petitioning the court for a preliminary injunction against PIL.

What's this latest legal video hassle about? Maintains Midway's Jim Jarocki: "The books take away from income and player appeal. By giving away secrets, you're telling players everything that would take many quarters to find out. I can say for a fact that Pac-Man earnings have declined since all the books have come out."

"I'd love to see them prove a drop in profits," replies Wayne Gianpietro, PIL's counsel. "If anything, the books give the games more publicity and get more people into them."

Gianpietro believes Midway will never get its case past either the Copyright Act or the first Amendment. "Does a Chevy repair book harm Chevrolet?" he asks rhetorically. "Of course it doesn't. I think PIL has an absolute right to publish these (video game) books."

Midway is seeking monetary damages from PIL and S & S, whose subsidiary, Pocket, published the Pac-Man book. Gianpietro expects the court to call for an evidentiary hearing some time this summer. Stay tuned, sports fans.

—*B.M.*

Disney v. Williams

On the surface, video games are "good, clean fun"—as they say in the trade. But, beneath the surface, there's a riot going on.

It's probably safe to say that every video game company has been involved in a suit regarding copyrights and patents. Atari versus North American Philips, Nintendo versus Artic International—these are among the numerous cases we hear and read about every day. Now, add to that list Disney versus Williams.

In May, Walt Disney Productions charged Williams Electronics with infringing on its rights to the name and trademark, *Tron*, which happens to be the title of a recently released Disney film. The suit, filed in Federal Court in Chicago, cites

Illustration by Mark Caparosa

Williams' latest video game, Robotron as the offender.

Calling the dispute "frivolous," a Williams spokesperson explains: "Tron is a dictionary word. There are over 200 trademarks that end in '-tron.' There's even a company named Robotron. This just further proves that anyone with $35 can go down to the courthouse and file suit about anything."

Disney hopes to gain a preliminary injunction ordering Williams to change the game's name. Asked to comment, Disney's legal counsel Peter Nolan would only say, "Legal battles should be fought in the courts, not in the press."

—*S.B.*

Atari v. Astrocade?

Will the real Pac-Man please stand up?

Though Atari owns the TV and home computer rights to America's favorite video game, Pacsimiles continue to abound. But they won't anymore—not if Atari can help it. Since the company's landmark victory over North American Philips and its K.C. Munchkin game in the U.S. Court of Appeals in Chicago last April, Astrocade has decided to put the production of its Munchie cartridge on hold.

Munchie is described in an old Astrovision (Astrocade's former nom de plume) brochure thusly: "You are captive in a maze of crazy, creepy ghosts. It's a spooky situation, and you can do one of two things: munch or be munched! Score as many points as possible, gobbling up everything in your path. . . . Do your best to save your soul!

"We saw what happened to N.A.P.," says a company spokesperson, "so we decided to think twice about it. But, I want to emphasize one thing: Atari is *not* suing us." Yet.

—*R.H.*

Apollo

(Continued from page 16)

ball on Intellivision the night before and it just hit me like a bolt—why don't we look into the possibility of developing video games?"

Admittedly, Roper knew not what he was getting into. For all he knew, Activision might have been a video recorder. "Frankly, federal funding for guidance films was drying up and I was just looking to diversify," he says.

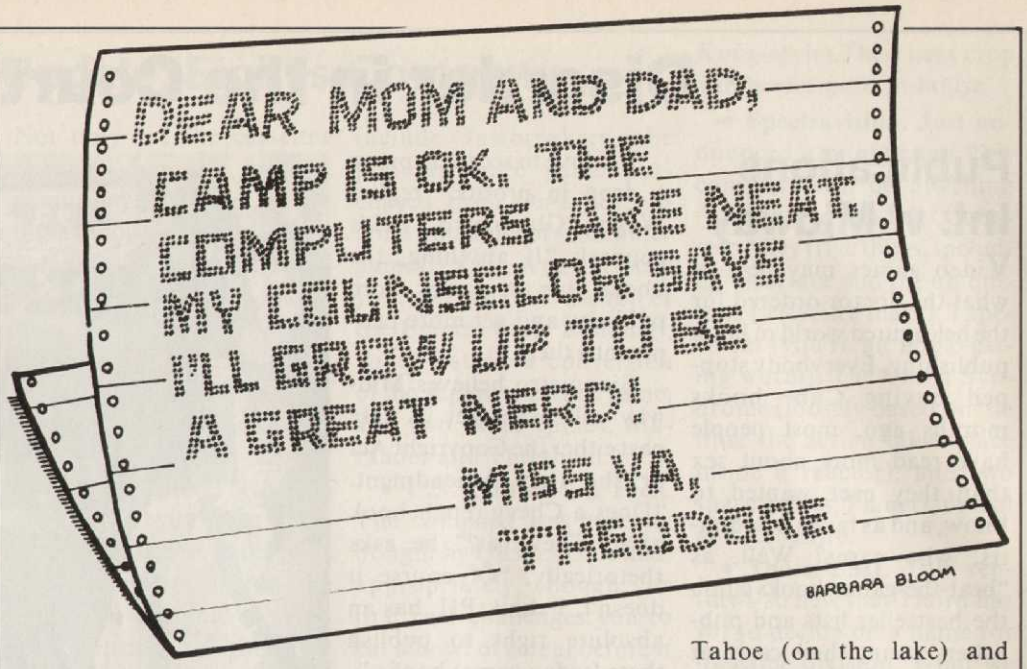
In contrast to most software start-ups, who usually start by luring designers away from existing companies, Roper hired a freelance programmer named Ed Salvo. When Roper called, he had been designing games out of a garage in Ohio. The game, Skeet Shoot, was Salvo's first ... uh, salvo.

Skeet Shoot, as it turned out, had some problems. For instance, it caused the TV image to spin vertically (which could be repaired by adjusting the hold). Defective or not, it barely matched up with the array of space, maze and sports cartridges flooding the TV-games market. "The real problem with Skeet Shoot," explains publicist Emmit Crawford, "is that it's not challenging enough for the real games aficianado. We put it out in too big of a rush."

Apollo followed with Space Chase, a solid shooting game, and has just released a quartet of carts headed by Lost Luggage, one which definitely requires explanation. Inspired by an incident at an airport baggage claim, the game involves a conveyor belt that goes haywire. The object is to grab the bags before they crash to the floor and spring open, scattering all of the belongings about the screen. In another sequence, a fiendish terrorist tosses a valise from the plane. Catch it or it'll explode.

Raquetball, Space Cavern (duel a Hydra in space) and Lochjaw (dive for treasures while avoiding the Loch Ness monster and sharks in a maze) should complete Apollo's offerings for 1982. During this time Roper expects to sell over one million cartridges. NCC, meanwhile, might even consider shooting a film titled, "The Fascinating World of Video Games."

—Randi Hacker



Computer Camps Want You!

While adults may still be wondering where computers are taking us, kids could care less. They're already going to camp with them. Yes, computer camps have arrived and if you hurry you just might make the final deadline for summer sessions around the country.

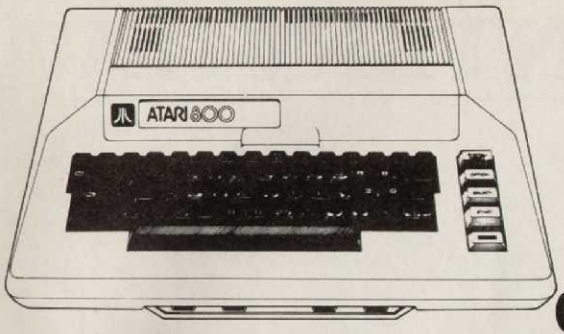
Computer Camps International (ages 9-17) runs three camps simultaneously in East Haddam, CT; Whitewater, WI; and Denton, TX. The last two sessions (July 25-Aug. 6, Aug. 8-20) still have openings as this is being written. For $795, campers get two weeks of instruction on Apple IIs, plus regular camp activities and free time to use the computers without formal supervision. For more information, call: 203-871-9227.

Atari offers sessions for 10 to 18-year-olds in four different parts of the country—three are located on college campuses (East Stroudsburg St. College in East Stroudsburg, PA; Lakeland College in Sheboygan, WI; the University of San Diego), and a fourth in the Smokey Mountains (Asheville, NC) The college camps utilize vacant dorms and campus facilities during month-long sessions that include two hours of computer training daily (on 400s and 800s, of course) in classes of 16 students or less. It may be too late to register for San Diego (July 18-Aug. 14), but it's not for Asheville and Sheboygan (July 25-Aug. 21) and East Stroudsburg (July 26-Aug. 22). The fee is $1,590 ($100 extra for horseback riding). Call: 800-487-4180 (212-889-5200 in New York and Canada.)

Computer Camps, Inc. (ages 7-16) has three especially scenic sites in Lake Tahoe (on the lake) and Santa Barbara (in Los Padres National Forest.) both in California, and Swan Lake, NY (in the Catskill Mountains). The July 25-Aug. 6 Santa Barbara session is already filled, but there is still room in the next one, Aug. 8-20. The last two Tahoe sessions (Aug. 1-13, 15-27) also have openings. The California camps cost $795, half the price of the New York camp, which is a month long (July 28-Aug. 23). All are equipped with Atari 800, Apple II, Texas Instruments 99/4A and VIC-20 computers and teach a minimum of three hours a day. There is a ratio of one computer for every two campers. Call: (800) 235-6965 (804-969-7871 in California.)

And, just so "grown-ups" don't feel left out of all this techno-fun, Computer Camps is offering week-long adult seminars, the last of which is scheduled for Aug. 16-20 in Santa Barbara. For $600 (not including room and board), computer neophytes from 18 to whatever can learn everything they've been wanting to know about software, programming, languages and word processing. Wonder no more.

—Perry Greenberg



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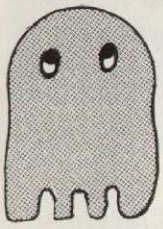

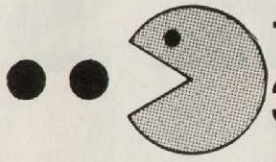

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VIDEO GAMES INTERVIEW

Tim Skelly

Slowly but surely, game designers are coming out of the closet. Skelly is among the first. Not only does he enjoy meeting the press, but signed his latest project, Reactor—"A Tim Skelly Game."

At the age of 30, Tim Skelly is one of the foremost video game designers in America. He is personally responsible for more arcade hits —including Rip-Off, Star Castle and Armor Attack— than anyone in the industry. Working alone where others tend to dwell in groups, Skelly is a maverick—something he proved recently by designing Reactor for Gottlieb.

Reactor defies the conventional wisdom of modern video game-ology. It's a target game—but you don't shoot. It's a raster game (broad images instead of lines)—but the graphics are almost abstract instead of representational. It involves destruction—but depends on subtle positioning. Reactor is subatomic bumper cars on a TV screen, an imaginative, potentially new direction for video games. But, it may also be an example of too much innovation—a game ahead of its time.

Skelly is a young veteran of five years in the coin-op business. His experiences during that time—as well as his iconoclastic opinions—offer valuable insights into the boomtown psychology of the ever-profitable video game industry. VIDEO GAMES asked Neil Tesser, *columnist for the* **Chicago Reader** *and jazz commentator for National Public Radio in Chicago (who also happens to be a college chum of Skelly's), to talk with Skelly. Tesser reports:*

"Tim Skelly has his moods. When we first spoke about doing the interview, he had just agreed to begin work on a new game with Gottlieb, and was quite pleased. But by the time we set up the interview date, conditions had changed and he was debating whether to even do a next game. And by the time we actually sat down with the tape recorder, he had begun weighing options outside the industry altogether. These include going into film animation—Tim's a passionate and knowledgable cinemaniac—and assembling a book of cartoons depicting the lighter side of video games.

"The cartooning comes as no surprise: Skelly drew all through college. In fact, that was probably the first of his talents I encountered. I soon found he had a knack for radio productions and electronic music, plus his video art was pretty wild for Northwestern in the early '70s.

"Tim Skelly is tall, bright and articulate. He laughs easily. His long curly hair and intense manner remind me of Dr. Who. Since he's in love with my third-floor neighbor, he's been around my building a lot these days; I just invited him down to the dining room, and we talked over caffeine-laced tea.

"My earliest memory of Skelly is the time at Northwestern when he dragged me out to Lake Michigan to commemorate Walpurgis Night. This involved standing on the rocks and yelling—to the accompaniment of Frank Zappa on a cassette deck—imprecations about the woes of our lives, hurling them like verbal boats upon the water. That was in 1970; so in a way, I've been preparing to interview Tim for 12 years."

VIDEO GAMES: Around the industry, you're becoming almost as well known for your theory on video gaming as you are for the games themselves. Why don't you lay it out for the folks watching at home?

SKELLY: Well, one of the things I learned when I was doing video art is that a light source, such as a video monitor, is inherently more fascinating than any source of reflected light. For instance, if you're in a bar, and there's a television on, most people will sit there and tend to glance up at the TV without even really watching what's going on. There's something primitive there; it's like looking in a fire.

Once you have the light source, your attention is already riveted. But most successful games, you'll notice, have a black background to them. Originally, this was for technical reasons. I have since realized that by having a black

Photo by Mike Tappin

Photo by Mike Tappin

background and having only the featured figures in bright colors, you create a situation where the primary features on the screen are inherently more fascinating than anything *else*. Well, with that much concentration, you're already in a light hypnotic trance. Anybody who's watched television and hasn't been able to get up and turn the damned thing off has experienced this. It's meditative, calming. But at this point you're still thinking about the kid who stole your lunch money, or that business deal that didn't go through, or whatever drove you into the arcade in the first place.

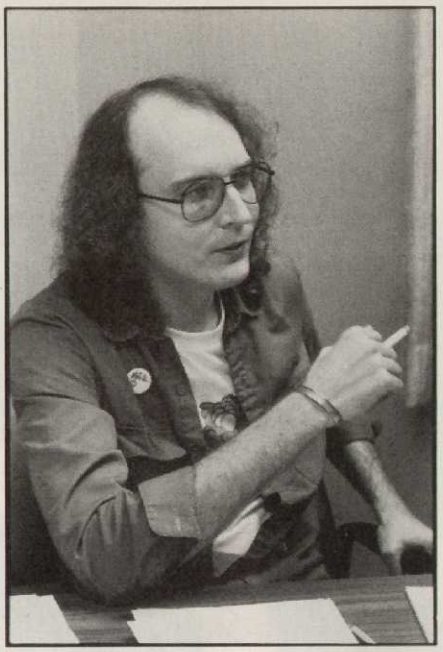
VG: This all sounds fairly manipulative. What happens next?

SKELLY: When the game starts, you have what I think of as the little electronic Zen master, which is anxiety. If you're careless, if you don't concentrate on what you're doing, you're going to lose a ship—and that's the little Zen master slapping you upside the head and saying, "Pay attention, Glasshopper!" So you pay attention—you pay *lots* of attention—so that by the time the game is over, as long as it wasn't a complete washout, you've already accomplished one thing, which is that your mind has been cleared. You feel that your problems are a little more distant than they were when you started playing.

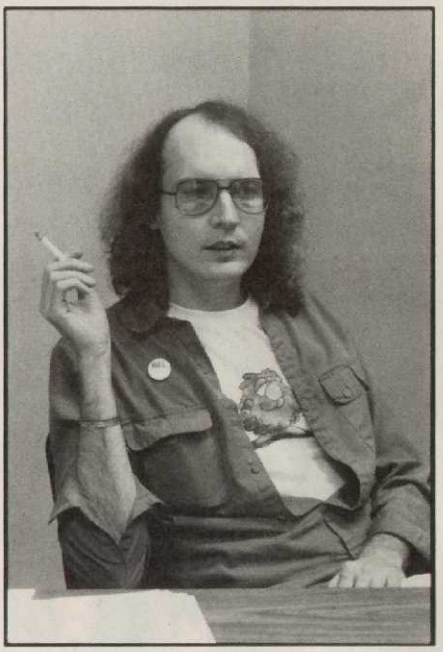
Now, if you really played well—and you're already in this suggestible state—then you feel really *good*. It's almost imprinted on you, and it lasts longer than the time you spent playing that one game. And if you don't do well—even though you might get frustrated and angry—there's still a feeling of involvement. I think the games are sort of like theta wave meditation. You're dealing not with a relaxed state of mind, but with an excited state, and that has its own pros and cons.

VG: Certainly, these are not the thoughts of some technology-crazed programmer wearing digital blinders. Just what exactly is your background?

SKELLY: Here's a good place to start. When I was in high school, in Canton, Ohio, the school had one of the first desktop computers—which in fact was nothing more than a glorified calculator—and we were taught how to program the thing. This sparked my fascination with computers. Then one day I had this amazing revelation: I realized the reason I liked computers was that I thought they *looked* really nice. I couldn't care less what went on inside of them.



"Reactor violates a standard rule of arcade xenophobia, which is: Anything that touches you, kills you."



"There's something primitive about TV—it's like looking into a fire."

I'd already done some radio stuff around Canton, so I decided to go in for radio-TV-film when I made Northwestern. I ended up accumulating enough work there to eventually put on an electronic show at Chicago's Museum of Contemporary Art.

I also studied at the Chicago Academy of Fine Arts. I've got quite a lot of art training; in fact, I used to support myself by doing graphic design for various and sundry purposes—letterheads, logos, matchbook covers, you name it.

VG: What made you go back to computers?

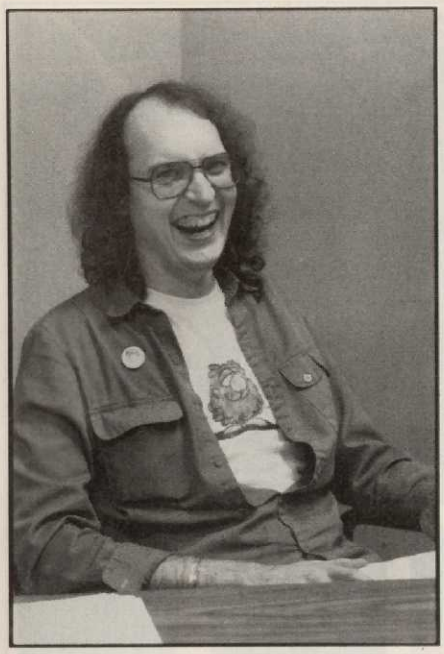
SKELLY: Doing video art, and also electronic music, I got hooked up to the notion that computers would be something I was going to have to work with at some point. A few years later, after not very successfully making commercials and industrial films, I found myself in Akron, Ohio, selling records and I decided I could do something a lot better with my time. So I took a couple of courses in assembly language programming and digital electronics. But, I had no notion of applying it.

Two years later, I was sitting in a bar, after I'd been fired from my sandwich-making job in Kansas City, and a guy walked in with a microprocessor under his arm. I looked at it and said, "You mean that's the whole *computer?*" He was planning to open up an arcade-like establishment, where people would play computer-type games, as opposed to arcade games. This was 1977, a year before Space Invaders; at that time, about the most sophisticated thing on the market was Atari's Starship.

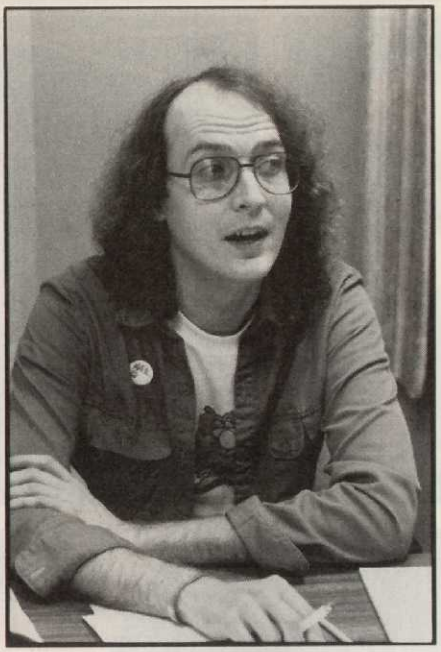
VG: So, you started programming computer games for the microprocessor man?

SKELLY: Not at first. See, I didn't have anything else to do, and I figured I'd help the guy set up; I thought I'd end up designing a logo for him. One night, when I was helping him, I said, "Hey, you got a manual for this thing? I'd like to try something." I wound up programming home type games, comparable to the kind of thing you see on the Atari VCS.

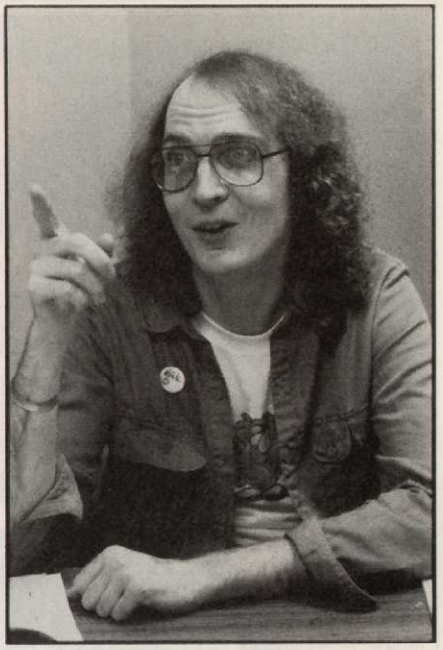
Now that I realized I had the ability to program games I began looking for a steady job. Frankly, I really wanted a position in Atari's art department. So I sent out resumes to all the game com-



"I'm seeing a trend towards pattern games. Zaxxon is probably closer to Pac-Man than Defender."



"The philosophy at Cinematronics was make it loud, make it fast and make it shoot a lot."



"The initial tests on Reactor were very bad. I had forgotten there was very little there for the initial player."

Photos by Mike Tappin

panies on the West Coast.

Cinematronics hired me immediately; at the time, all the company had was one designer, and he was about to leave. When I got to San Diego, two weeks later, he was gone. He'd split with all the hardware *and* all the software—including the operations codes—and I had no idea what to do. I had never written a full-length assembly-language program in my life—at least, not one that worked. I actually would've picked up and left had it not been for about a hundred employees at the company who were depending on me to come up with a game.

VG: This all reminds me of the inspired madness you hear in the tales of the early TV industry. Here you are, barely qualified in a technical sense, trailblazing your way out to the coast and leaping into a new field—with the fate of an entire company hanging in the balance no less. You designed—and programmed—Starhawk, which was a hit and which saved Cinematronics. After that you did Sundance—

SKELLY: —a total dog—

VG:—and then Rip-Off, a truly innovative game. How did Rip-Off come about?

SKELLY: Well, I had been kicking around one idea that wasn't very good. The idea was just to sort of get attacked by a whole bunch of little guys and shoot your way out. From the notion of Space Wars, I like having two players on the screen at the same time. Then, I heard of an FM radio survey saying that kids were really angry, frustrated and wanted to strike out, but they also had the desire to team up with their peers. I thought, "Great—I'll put both players on the screen together and team them up." Now, I just had to set it up so they couldn't shoot each other.

Rip-Off turned out to be real successful because, instead of fighting each other, the players teamed up against the meatballs in the middle. By the way, just to show you how game ideas evolve—the fuel cannisters or meatballs in the middle were originally watermelons in a watermelon patch.

VG: Was there an overriding philosophy for the Cinematronics games?

SKELLY: Yeah—make it loud, make it fast, and make it shoot a lot. At the time, Cinematronics was only using vector graphics—a la Tempest—as opposed to raster games, such as Space Invaders or Pac-Man. We did have a certain unique quality with vector. But on the other hand, we couldn't fill the screen with color or solid areas or anything like that. I mean, most of the early Cinematronics games were pretty boring to look at. So what we went for was a lot of visceral impact—exciting explosions, really loud noises and a lot of action.

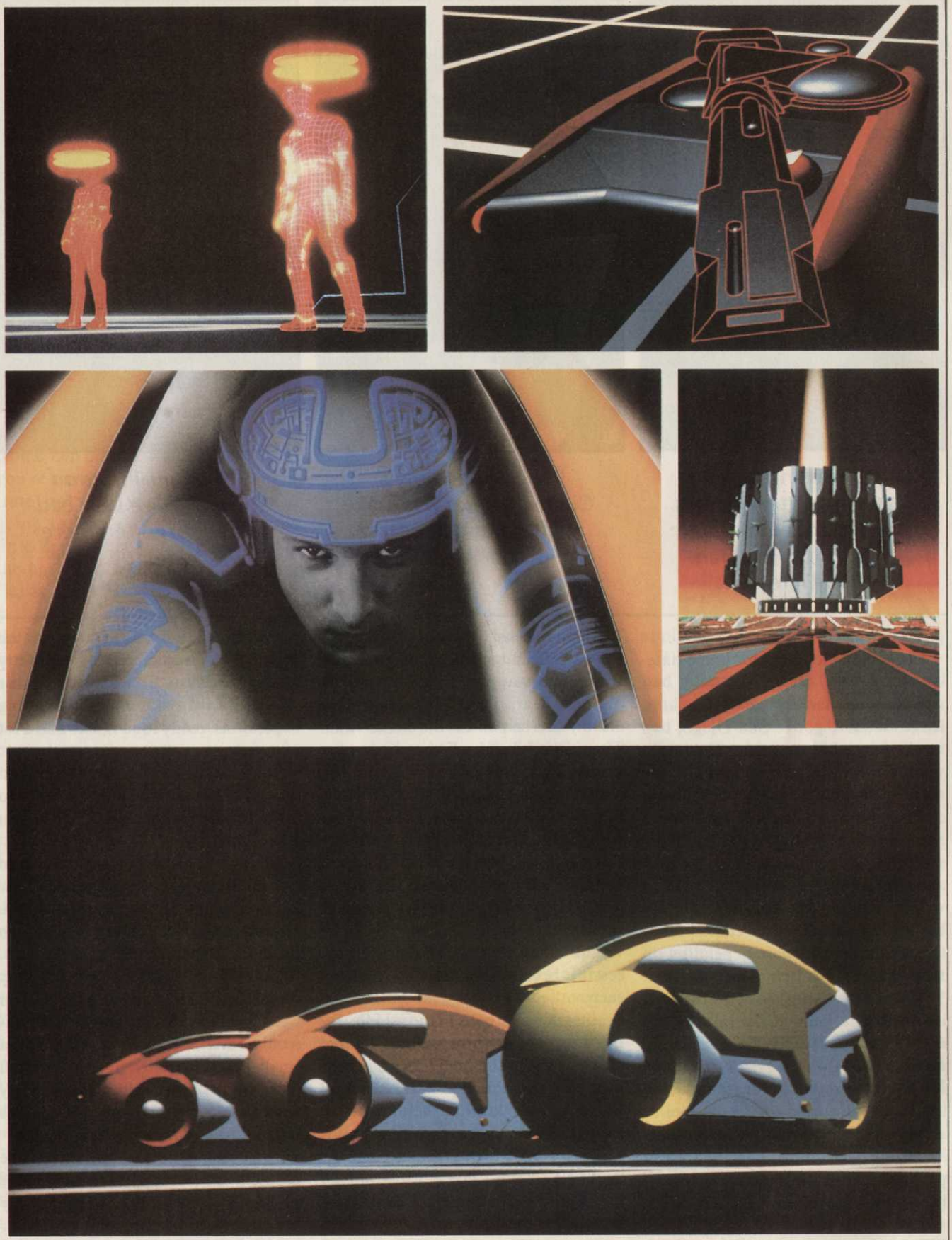
VG: You also did Armor Attack and Star Castle for Cinematronics—two more successful games—but then you left. Why?

SKELLY: I left because Gremlin (which is also in San Diego)—now Sega/Gremlin—had been trying to hire me for over a year. Out of loyalty to Cinematronics, I'd been saying no. Finally, Gremlin offered me a royalty on my games, which was something I wasn't getting. So I went to Cinematronics and asked for a royalty—a smaller one, actually—and they cried poor, said I was killing them. They wouldn't do it. So I finished the games I was working on and left.

VG: I understand you ran into some problems at Gremlin. What happened?

SKELLY: I got a little ways into my first game—and developed some rather interesting routines for their color vector monitor—when Cinematronics sued myself and Gremlin. Cinematronics holds applications patents for vector displays and was trying to harass

(Continued on page 74)



Tron's *fantastic computer voyage is the work of four imaging companies—Information International, Mathematics Applications Group, Digital Effects and Robert Abel & Associates. From the top (left), warriors are shown in metamorphoses, a tank (right) patrols the simulated game grid, Bruce Boxleitner (middle left) sets his sight on dethroning the wicked MCP, the Master Control tower (left) beams information to the real world, and three light cycles (bottom) await the race of their lives.* *For more exciting pix, see page 29.*

VIDEO GAMES GO TO THE MOVIES

Disney's Tron *is 70mm proof of Hollywood's latest infatuation—video games. With* Starblasters *already a coming attraction, some are beginning to call this trend, "A perfect, ideal marriage."*

By Sue Adamo

Timothy Ferris has been losing a lot of time playing Tempest. "I was playing it the other day," he recalls. "It was a beautiful day in San Francisco and I wandered into an arcade along the wharf. As I pumped more and more quarters into Tempest, I suddenly wondered, 'What am I doing here? It's a gorgeous day.' " Ferris laughs before arriving at his point. "Video games *are* computer games. Every area that computers have touched, they (computers) have infiltrated. That's what you get for setting loose a competing form of intelligence on the surface of your planet."

Steven Lisberger's allegiances are torn. The video games that he likes from a visual standpoint don't always hold up in other ways. Right now, Lisberger rallies behind Battlezone, primarily because he likes the game's three-dimensional point of view.

What interests Bill Kroyer about video games are the people who play them. "Of course, everybody has their own story about why they take up different hobbies," he says. "But I see trends in certain video game players—how their families think about them, what other people think about the people who play video games. I find that all very interesting."

Ferris, Lisberger and Kroyer are part of a vanguard of young filmmakers who are using computer animation and other high technology arts to transport video games from the arcade to the silver screen. Now that the games have proven beyond a doubt they have a solid audience behind them—arcade games grossed about $6 billion last year with Pac-Man equaling the income of Hollywood's biggest money-maker ever, *Star Wars*—film studios are beginning to take notice. The prevailing wisdom is that video games can serve as a timely vehicle for steering characters into high-speed adventure or, at least, as an electronic backdrop against which personal dramas can unfold.

Disney's *Tron*, which opened in July, promises to be the first of many video game fantasies that will be played out on the big screen. Written and directed by Lisberger and produced by his partner Donald Kusher, *Tron* is a cinematic landmark, the first movie to combine live-action with the extensive use of computer-generated imagery. Essentially, the story is about life inside a computer and goes something like this:

An arcade owner named Flynn (Jeff Bridges), author of the hit game Space Paranoids and ex-programmer for a communications conglomerate called ENCOM, suspects ENCOM executive Ed Dillinger (David Warner) of pirating the computer programs of ENCOM employees, a deed Dillinger *is* committing through a Master Control Program (MCP). With the help of a Dr. Gibbs (Barnard Hughes) and his assistant Lori (Cindy Morgan), Flynn sneaks into ENCOM, where he plans to decipher the MCP. But, by this time, the MCP has outgrown the commands of Dillinger and is patching into systems outside of ENCOM, including the Pentagon's. Before our hero is able to uncover any evidence of wrongdoing, the MCP "digitizes" him, sending him reeling into the film's electronic realm. Flynn never has a chance.

In this alternate world, programs exist as the alter-egos of the programmers who created them. It is a world ruled by Dillinger's wicked alter-ego Sark, who sentences Flynn to a death match on his own video game creations. Along with Alan Bradley who doubles as the security program TRON (Bruce Boxleitner), Flynn duels on game grids, narrowly escapes on an electronic light cycle, is pursued by tanks, travels on a solar sailer and goes to battle on a Sea of Simulation in an all-out effort to destroy the MCP.

Lisberger came up with the idea for *Tron* in 1977 after completing a round of home video games with his family. "I was impressed with the games because, to me, they represented a bridge to technology," he says. "They're artistic and oriented towards more human things than computers usually are. I was intrigued with the concept of expanding upon that, using computer-generated visuals to take video games

Striking Back, Software-Style

While video games have served up some timely inspiration to filmmakers, the converse is also proving true. Suddenly, game manufactures are lining up to license Hollywood's latest blockbusters. In addition to *Tron* and *Spaceblaster*, video renditions of *The Empire Strikes Back, Raiders of the Lost Ark* and *Conan the Barbarian* are all being readied for release.

But whereas Parker Brothers (*Empire*) and Atari (*Raiders*) are merely capitalizing on award-winning motion pictures after-the-fact, some of these film-to-game translations are beginning to beat their celluloid parents to the public. Midway's Tron is the best example of this trend. Developed jointly by the Chicago-based coin-op concern and Disney Productions, its appearance in arcades preceded the film's arrival in theatres by more than a month.

Actually, the Tron game was assigned exclusively to the Bally-owned Alladin's Castle game centers—where a pre-Tron tourney was held—before being distributed everywhere else. "It was just a promo stunt," explains Midway's Jim Jarocki. "Since this was the first time a movie and game based on the movie had ever been done, we decided to do something different. It's a very uncommon thing."

Similarly, as *Spaceblasters* is evolving, so is the coincidental video. "We want the game to be an integral part of the film," says co-producer Adam Fields. "We want it to be as innovative as the film is. What we have in mind is a game that will be a compliment to the film, not just a marketing tool."

Though little is known yet about the Spaceblasters game other than the made-for-TV software will be provided by CBS Video Games, plenty of information is available on Tron. In Midway's version, which is based on four different scenes from the movie (life cycles, tanks, input/output tower and Master Control Program), you must complete all four before proceeding to a higher level. The trick is that you never know which sequence is about to appear. Three separate *Tron*-inspired cartridges for Mattel's Intellivision—titled Deadly Disks, Solar Sailer and Maze-a-tron—should cause no such confusion. Nor should the hand-held model, courtesy of Tomy.

Astrocade (formerly Astrovision) has also got into the act with its adaptation of Universal's *Conan the Barbarian*. According to David Armstrong, who designed the cartridge that debuted at the recent Consumer Electronics Show: "I've tried to bring the Dungeons & Dragons concept into real-time simulation with Conan. The more you interact with the character, the closer you get to a real-time environment."

"This is a real breakthrough," boasts Astrocade's VP Ray George. "I believe Conan will actually speed up your thinking, improve your ability to solve puzzles and exercise your imagination in new and different ways." He adds unabashedly, "I predict Conan will be the most popular video game cartridge ever. It may even outsell Rubik's Cube."

Meanwhile, Parker Brothers and Atari are moving full steam ahead into production of their blockbuster games. Following a few bars from the film's score, The Empire Strikes Back commences with the dreaded Imperial Walkers attacking the rebel base, which you are appointed to protect. Slowly but surely, like elephants, they proceed in the direction of the power generators, firing constantly. Traveling in a Snowspeeder, you repel the Walkers with your own blasts. It takes 48 hits to do one in. "The Force" (as in "May . . . Be With You), by the way, makes random appearances in the game. Whenever it does, you suddenly become invulnerable.

Besides a scene with snakes and Harrison Ford's magical whip, Atari's Raiders, which is scheduled to be in the stock by Christmas, remains a mystery to us. We do know, however, that Atari and Columbia Pictures are planning to join forces next summer when *Krull*, a sorcery epic, is released. Gottlieb, Columbia's coin-op subsidiary, will design and manufacture video and pinball games tied in with the film as well.

Finally, Fox Video Games is working on a cartridge that mirrors one of Twentieth Century's summer titles, *Megaforce*. It should be available by January.

—*S.A.*

beyond their conventional look to a more intense, more realistic look."

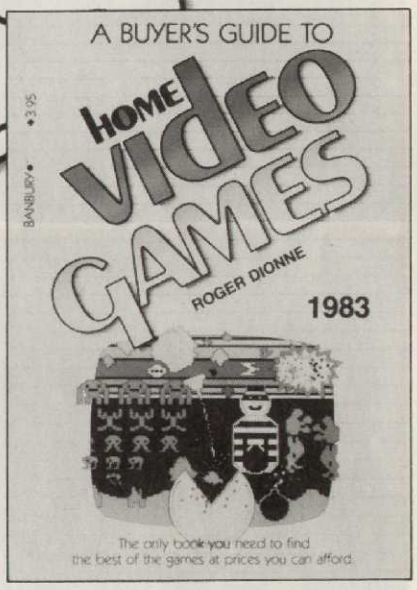
For the 31-year-old filmmaker, *Tron* was a natural step in an ambitious career in animation. While still at the School of the Boston Museum of Fine Arts, his "Cosmic Cartoon" was nominated for a Student Academy Award in 1973. He first worked professionally at PBS on such programs as "Nova" and "An Evening at the Pops."

In 1976, Lisberger created a six-minute film titled "Animalympics," in which animals performed in various Olympic sports. The idea landed him a $10,000 grant from the American Film Institute, and the project grew into a 90-minute, multi-million dollar production. In order to complete the project, Lisberger moved to larger studios in Venice, California and brought with him the treatment for *Tron*.

It took Lisberger two years to write the screenplay as well as research the latest computer and optical effects technology. By mid-1980, after negotiating with several other studios, he struck a deal with Walt Disney Productions. "It seemed like a natural choice," explains Lisberger, "because Disney's always talking about trying to make technical breakthroughs. Also, since I knew there was going to be a lot of computer-generated animation in the film, I thought Disney would be a logical place to do that."

IT RATES THEM ALL!

VIDEO GAMES



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VG

"The images that ended up on Tron *were identical to what we originally thought—with almost no dilution."*

DR. BRIDGES AND MR. FLYNN: First seen at the controls in an arcade (top), our hero appears less in control as the helmeted gladiator in Tron*'s fierce electronic fantasy world (bottom).*

Now came the task of assembling the project's creative braintrust. French comic-strip artist Jean "Moebius" Giraud, one of the founders of *Heavy Metal*, was flown in from France to work on the character styling and storyboarding. Industrial designer Syd Mead was chosen to render the vehicles (police recognizers, tanks and lightcycles) that would later be computer-generated. High-tech artist Peter Lloyd was asked to contribute color styling and background design.

Lisberger also recruited Richard Taylor, manager of the Movie Technology Division of Information International, Inc. (Triple-I) and winner of four Clio awards for excellence in television commercial production, to oversee computer imaging and optical effects along with Harrison Ellensaw, matte painter for *Star Wars* and *The Empire Strikes Back*, who also signed on as associate producer.

Finally, four leading computer graphics houses—Triple-I, Mathematics Applications Group, Inc. (MAGI), Digital Effects, Inc. and Robert Abel and Associates—were hired to execute the computer images that were to be choreographed by animators Jerry Rees and Bill Kroyer. Matched with the live-action, these computer-generated scenes would create what Lisberger now calls "counterfeit reality."

As an animator schooled in the classic tradition (he worked on Disney's *Pete's Dragon, The Fox and the Hound* and with Lisberger on *Animalympics*), Bill Kroyer found *Tron* unusually challenging, the artistic payoff especially rewarding. "For example, when we had two motorcycles racing across a grid," Kroyer comments, "we would have to tell (the programmers) where they would turn, how they would bank and how they would skid. We had to define every single motion of every single axis of every object for every frame of the scene.

"In addition," he continues, "we had to define to the programmers, and they to the computers, where the camera would be, how it would move throughout the scene, what angle we'd be shooting at, where the light sources would be and what the choreography of the scene would be."

Armed only with their animation experience and sketchbooks, Kroyer and Rees immediately had to come to terms with a process entirely foreign to them. Kroyer, it seems, came away overwhelmed.

"I don't think there's ever been a filmmaking process that has allowed an artist to transfer his personal vision onto the screen as intact as we experienced with this computer image choreography. It was quite a thrill.

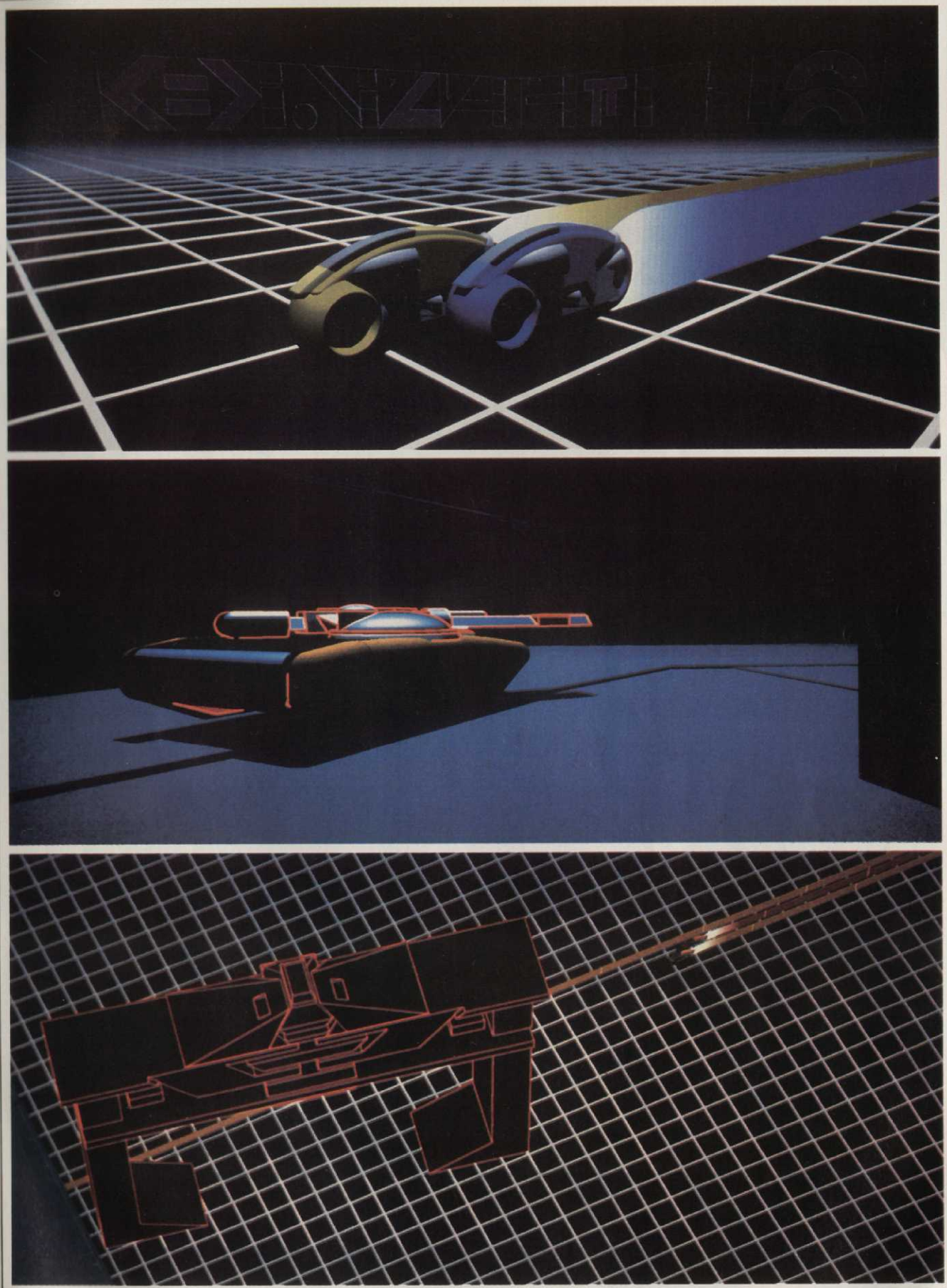
"A live-action director," Kroyer adds, "has actors who interpret what he wants, has set designers, cameramen and lighting men, editors and a number of people who put their two cents in. An animator has to contend with his own drawing ability, with his director and photographers. But, a computer image choreographer goes *one-step*. He goes from his mind to the computer and the computer goes right to the negative film. The images that ended up on *Tron* were identical to what we originally thought—with practically no dilution."

As excited as he is about these latest technological developments, Kroyer is quick to point out that computer choreography should only be another tool in the filmmakers' repertoire and not a substitute for either classical animation or live-action performances.

"You just can't do organic characters the way you can with hand-drawn animation," he says. "But, you *can* do a lot of the busy work, a lot of the mundane processes of character animation with computers. Plus, computers replace model photography and a lot of other types of special effects work. The important thing is that in animating with computers you can do a whole realm of brand new artwork that was not available to us before."

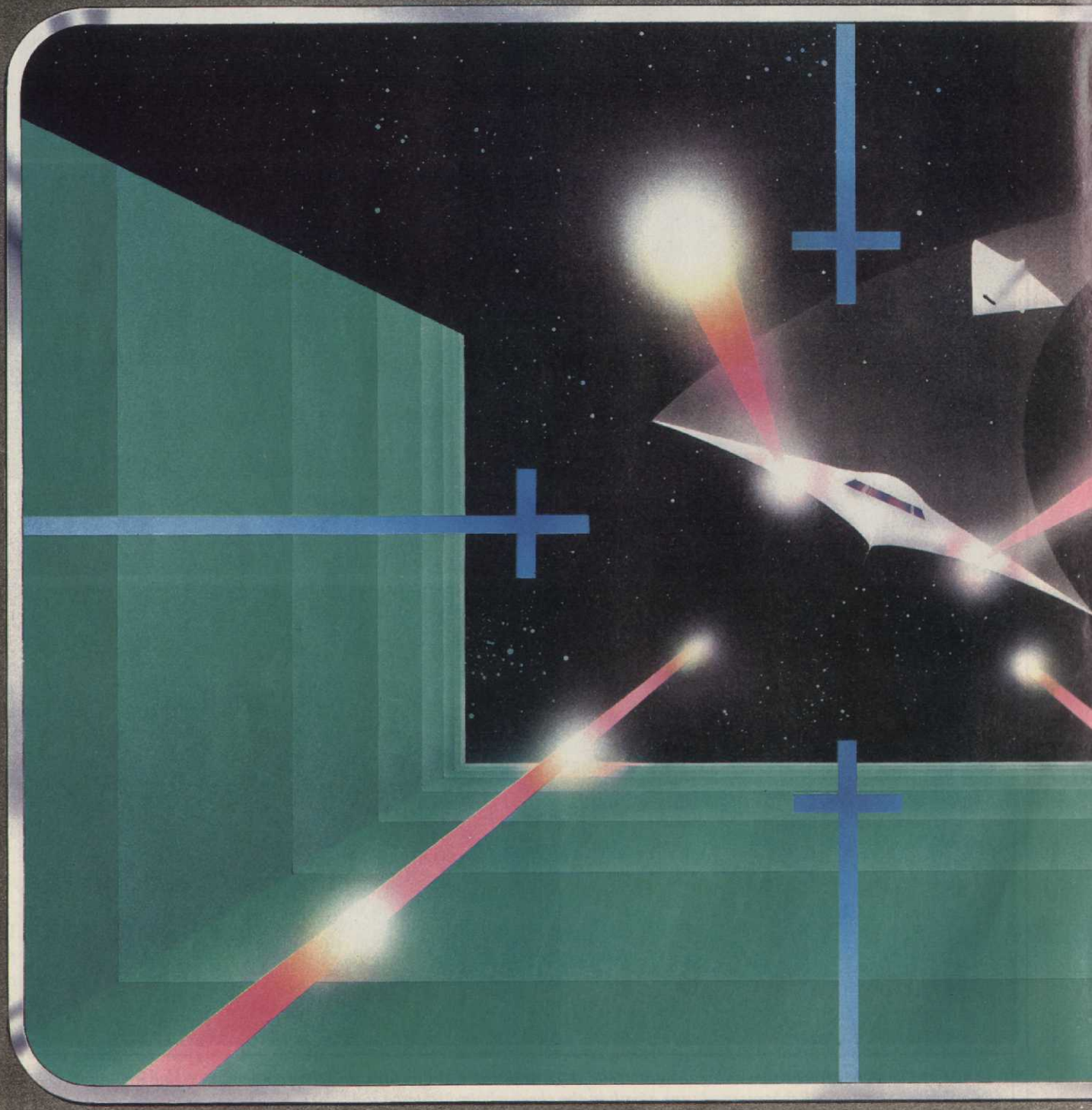
"There's going to be a meeting of the two worlds soon," Kroyer predicts.

(Continued on page 75)

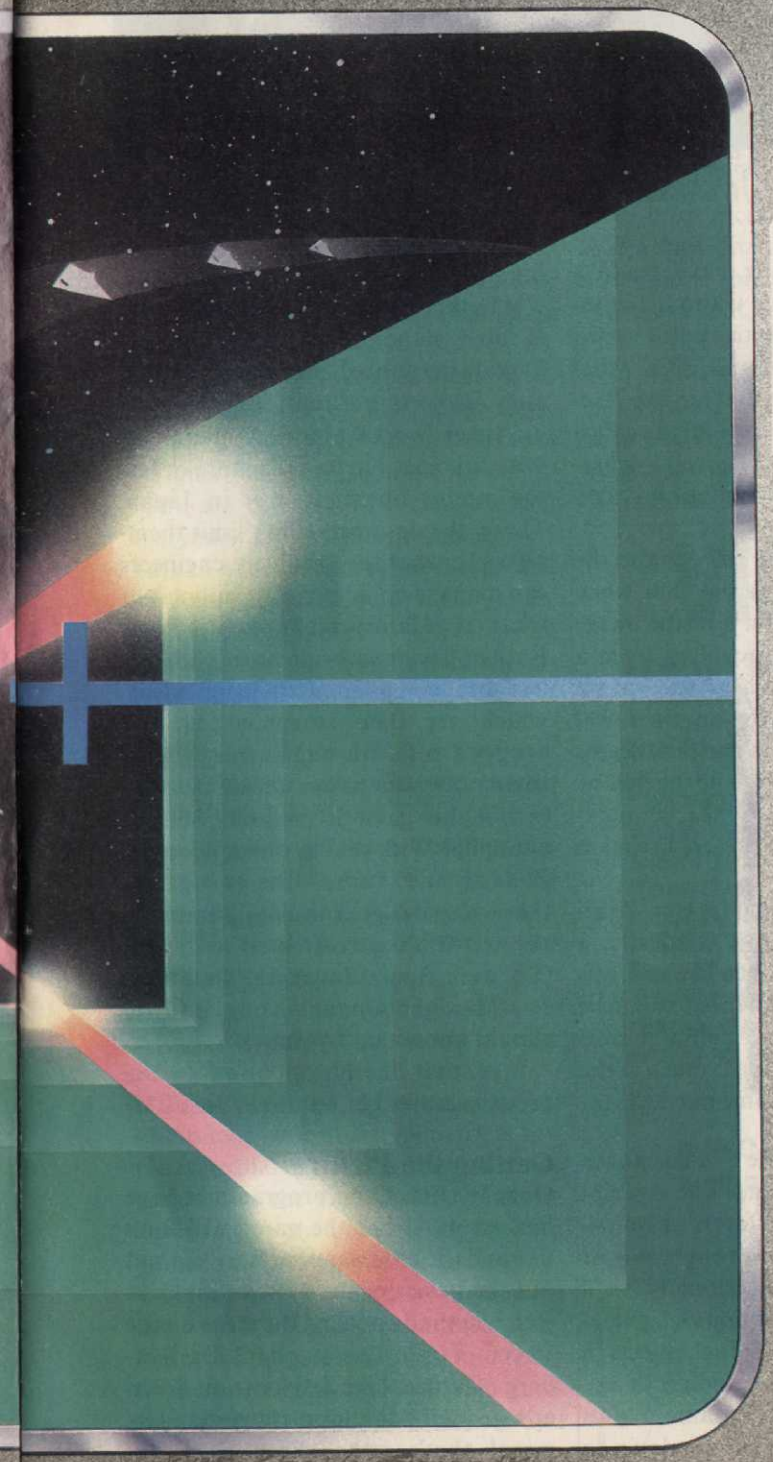


(Top) The light cycles zoom along the grid, (middle) a tank seeks out its foes, and (bottom) a huge flying hulk of a robot—known as a Recognizer—burns a path in the checkerboard square.

THE ART OF



VIDEO GAMES



By Bob Mecoy

A video arcade is a kind of 21st century electronic art gallery. Inside fancifully designed, silk-screened cabinets, an orgy of computer-generated graphics explodes across the darkness of TV screens. Huggable, mischievous, slapstick characters dance around a maze; robotic creatures march to sound of a very different drum; barren, unearthly geometric landscapes become the backdrop for every imaginable war-drenched fantasy. All that's missing is the wine and cheese.

Less than a decade ago, video game art consisted of a dot of light bouncing on a black background between two white bricks. Its creators, Nolan Bushnell and Al Alcorn, titled the work "Pong." Alongside the cosmic, multi-color designs of today, Pong could be a cave rendering. What this should tell you is something about how rapidly video game art is changing. If humankind was developing at one hundredth the rate of these games, we would come in as many colors as Baskin-Robbins ice cream and no one would have an IQ lower than four figures. Like they say, time sure flies when you're having fun.

The Hard Facts

Pong was realtively powerless. Inside the cabinet were integrated circuits—not microprocessors (chips)—that determined the flight of the ball, paddle movement, the score and whether or not the machine had swallowed a quarter lately.

Now, compare that to one of today's state-of-the-art battleships such as Zaxxon or Tempest If you popped open the back panel of eithr of these machines, you would find two circuit boards dotted with as many as three microprocessors, a raft of memory modules and all the control and communication electronics to connect them to the outside world. The speed and complexity of the gameplay and ability to move scores of objects independently at once, in addition to the display's bright, vivid colors, are all the result of the latest technology. In contrast to Pong, Zaxxon and Tempest are powerhouses.

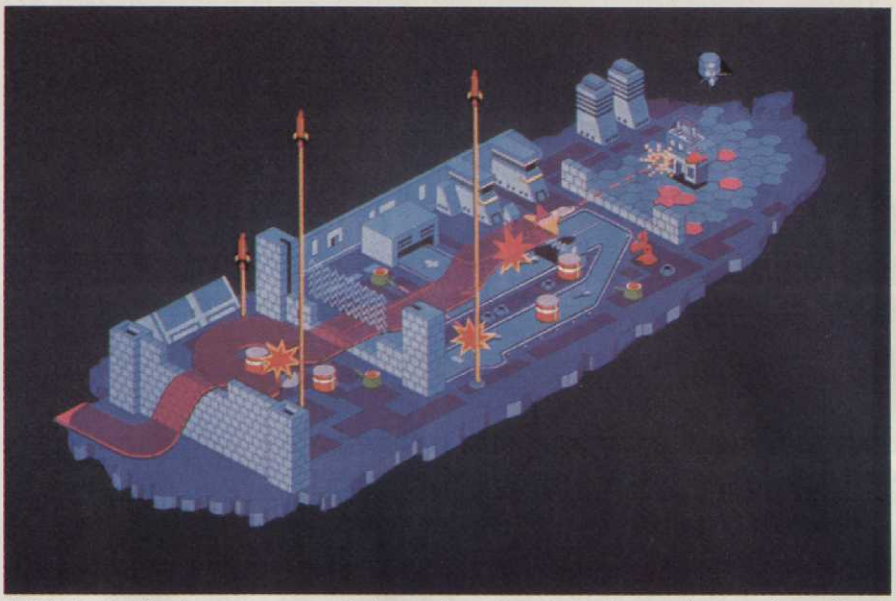
The key to all this is memory. While chips continue to grow smaller and cheaper, more memory cells are being packed onto the silicon sliver. For every hyperopic video game designer east of Java, that's great news. As one told me recently, "Nowadays, you can plug a microprocessor and all the necessary support circuitry (into a cabinet) for less than the price of a good dinner."

Let's Get Magical

Game designers are the pride and joy of the electronic gallery circuit. Though they do most of their work in highly secretive research labs—not chic, remoldeled lofts—they are artists just the same. Who are these people and just how do they go about putting all this eye-grabbing glitz on the screen? I decided to make a few phone calls to find out.

One of the first designers I spoke to listened carefully to my questions about how game art happens, then just laughed and said, "It's magic." But others proved more helpful, even though practically everything about this industry is either proprietary or under litigation.

After numerous conversations, I was able to arrive at this conclusion: To a large extent, the look of a game is dictated by three things—technolgy, trends and individual taste. For example,



AH-SO: Unlike here, Japanese designers have few limits imposed upon them. Sega's Zaxxon (pictured above) is just one example of the kind of game a creative atmosphere inspires.

Tempest could never have made a splash in the arcades without the invention of a cost-effective color vector monitor. And we've all seen what happens when a ghost-eater like Pac-Man comes along—you might call it the Xerox Syndrome. The rest—whatever little is left in this equation—is up to the designers.

Now, these factors may shape the general look of the games, but when you start talking about how the image we see on the screen evolves from a notion in a designer's head to what we finally get seduced by in the local Chuck E. Cheese pizza parlor, it seems that there are as many approaches as there are companies. Videa, an independent design firm, prefers the team approach.

Says president and former Atari engineer Roger Hector, "typically, a game idea comes out of a brainstorming session. The next step is to take the story of the game and define it so it then can be storyboarded, much in the same way some way some movie directors do their films.

"After that, the game is talked about and ideas talked around. The concept goes through various levels of refinement. Often we'll go through two or three storyboards. Occasionally, we'll even videotape simulations of gameplay with three-dimensional objects in an attempt to visualize some of the different dynamics of the game. We do all of this *before* ever getting down to the hardware design and program writing."

At other shops, where the hardware is fairly standardized, the team may include only an artist and programmer and, in certain situations, the programmer works alone. While that's unusual here, I'm told it's more or less the modus operandi over in Japan. There, the designers don't limit themselves to what the hardware engineers can manage on a budget, deadlines, or what the latest technology offers. Rather, designers brainstorm with artists and come up with game ideas, which are then storyboarded and dropped off with engineering. Now, some poor soul has to decide whether or not this game is possible. Sounds anarchic? With that in mind, consider Zaxxon and Turbo—the two games that every designer is calling state-of-the-art. Both were created in Japan. (So were Space Invaders, Galaxian, Pac-Man and Donkey Kong, but you should know that by now.)

Still, that doesn't tell you how the pretty pictures get up there, does it?

Getting the Picture

Once the artist and programmer have hashed out what the game will look like and the hardware engineer has laid out the basics of the system, the next step is actually putting the ideas on the screen. To do this, explains Ed Rotberg of Videa, "An artist can sit down at a *graphics* development system terminal that's either been specially-designed or specially-programmed to

allow him or her to go in and design a set of building blocks to put together the picture you finally get to see."

One of the few artist/programmers in the business, Tim Skelly continues the story. "On a raster system, every dot—or pixel—on the screen has a certain number of bits in the machine's memory describing it. The artist can literally work each individual dot on the monitor screen—color it, change its color, hue, intensity—until he gets just exactly what he wants up there. Now, if you want to animate what you've put on the screen, it's really a lot like animating a cartoon. You 'draw' a series of frames for each of the objects and each of the moves you want it to make—walking, turning, shooting, whatever—and then you build cycles of movement into the program for the various gameplay contingencies." (*For more of Tim Skelly's comments, see VIDEO GAMES interview starting on page 20. Ed.*)

It's not really that complicated; it's just that all of this may change fairly soon. According to one anonymous designer, "it's going to be awhile before there are any *big* new changes, but everybody's working on *something*." Talk to a few people in the design and hardware departments and you get the unmistakable impression that there's a real race for the next state-of-the-art breakthrough going on.

Ultimate Video

If you want to make a game company executive squirm, just ask him about *non-computer* graphics. You'll probably see an exhibition of dissembling on a par with any of Nixon's classic post-Watergate press conferences. It's that touchy a question.

Though non-computer graphics are a topic no one in the industry is ready to go on record about, certain well-informed sources indicated that just about everyone in the industry is furtively exploring a marriage of video games and the videodisc. If realized, this could be the ultimate step toward games with movie-quality visuals.

Here's how it would work: Since a laser-read videodisc contains every frame of a given movie, and each frame has a computer-readable number, a certain number of scenes and gameplay possibilities could be accessed at the touch of a switch. You'd have the choice of, say, Tie fighting in space or running the Death Star gauntlet with graphics and sound (videodiscs can carry tremendous stereo) equal to anything you've ever seen and heard in an arcade.

There are some bugs that will have to be ironed out first, though. Besides making it affordable, it would be nice if the hardware engineers could bring down the disc's access time so you don't end up staring at a blank screen whenever you make a good move or decide to hyperspace into some unknown galaxy.

You see, the laser reader has to line itself up with the groove where the picture is, and if you make a move that jumps you to a groove a long way from where you just were, there will be no picture for a couple of moments. Do that a half-dozen times in one game and you're going to be pounding on the screen. But, nobody seems to think these problems are insurmountable.

Meanwhile, Ed Rotberg's been paying attention to a computer called the geometry engine that's being designed by James Clark at Stanford. "It's based on a new order of microprocessor that allows you to see three-dimensional graphics like the ones in *Tron*, but in real-time," says Rotberg, who programmed Battle Zone during his tour of duty at Atari. "It's going to be a few years before anything like this is in the arcades. I believe it has the potential to *completely* change the look of video games."

When you ask other designers about their dream game—their personal ultimate—it usually sounds something like this: In four or five years, we'll be sitting in a booth inside an arcade that's walled with various-sized screens—effectively, a 360 degree sensurround. There will be a four-channel sound system and we'll be getting all our other senses massaged, too. Let's just say the booth'll be shakin', rattlin' and rollin.' We'll captain jets, land the Space Shuttle, fly through environments so realistic we'll swear we were there.

"A really good game designer," Rotberg explains, "has to be able to slip over the edge of insanity and come back with a crazy vision and implement it."

I knew it couldn't all be magic. ▲

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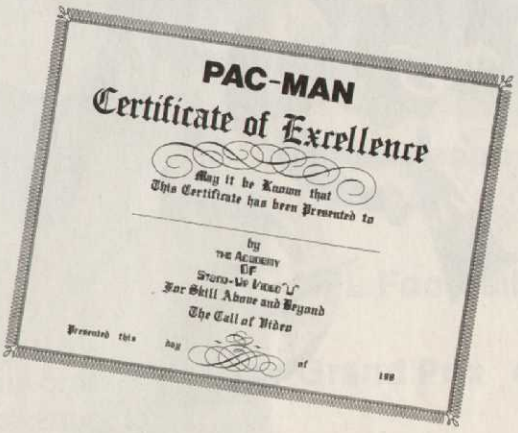

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TV-GAMES
Buyer's Guide

36 Introduction

36 Starmaster

37 Star Strike

37 Star Voyager

38 Astrosmash

40 Super Breakout

40 UFO

41 Space Cavern

41 Chopper Command

42 Haunted House

Quest for the Rings 43

Demon Attack 44

Defender 44

Yar's Revenge 45

Major League Baseball 46

NFL Football 46

Grand Prix 47

Kaboom 47

Space Fortress 48

Auto Racing 50

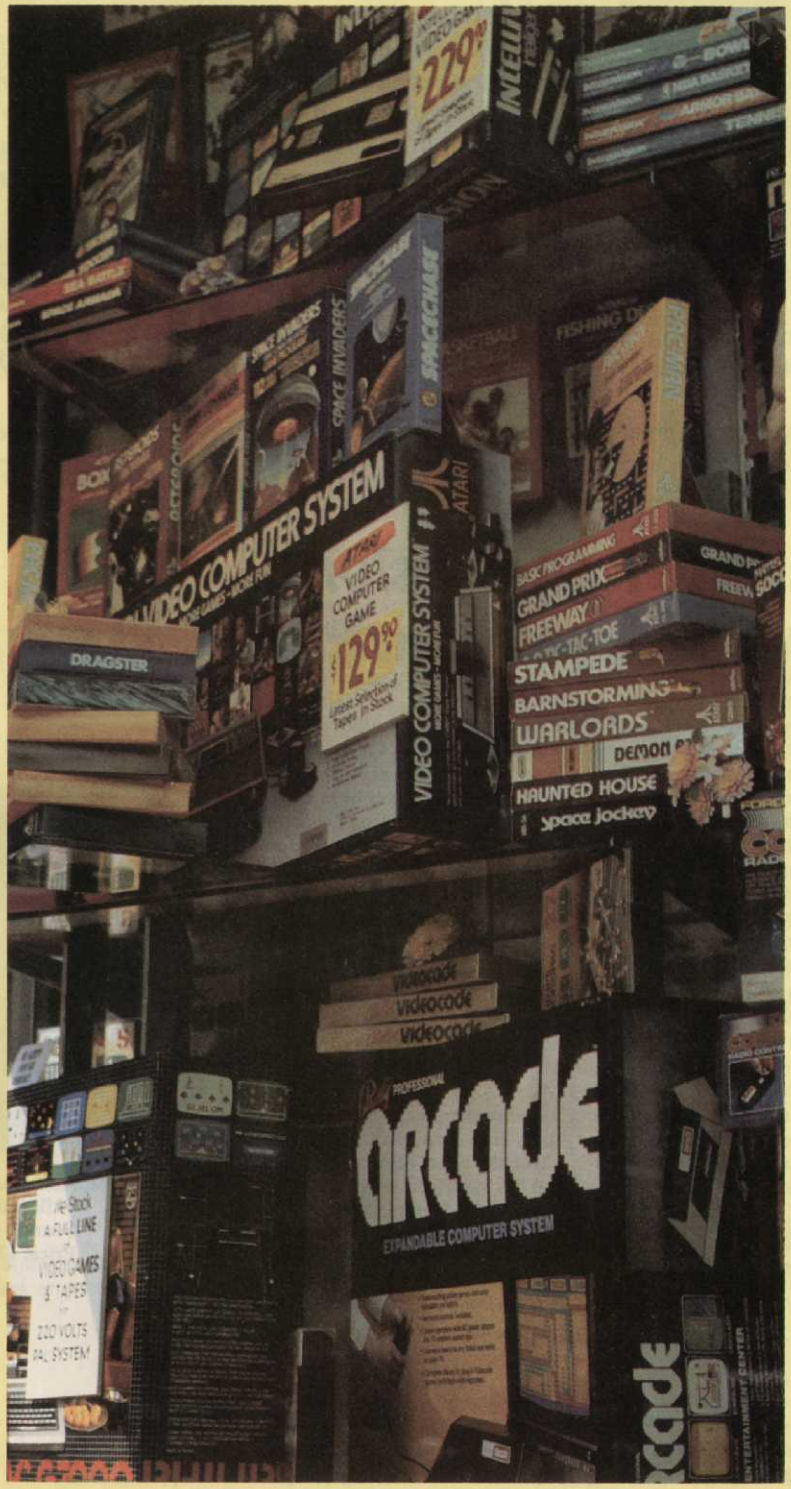


Photo by Perry Greenberg

A stern-faced social critic confided to me the other day his vision of the future: Millions of people locked in silos, ordering necessities through their computers and whiling away their lives zapping imaginary enemies on their television screens. It's true video games are often expensive and hypnotic computer-age versions of solitaire, about as socially and morally evil as crossword puzzles and detective novels. However, they are also tremendous social catalysts, which can transform the ubiquitous television sets of America from instruments of passive entertainment into centers of active involvement. I personally would much rather spend an evening, whether alone or with friends, participating in Atari's Asteroids or Intellivision's Astrosmash than sitting back like a zombie watching the lunatic antics of Mork and Mindy or listening to Shelley Winters discussing inanities with Johnny Carson.

Furthermore, video games are great levelers. Young and old, male and female, muscle men and weaklings, tall and short, fat and thin—they're all equal when they step on the electronic playing field for the first time. "Physically we're not as good as a lot of men," a woman recently told me. "That's why I like these games as much as I do. I'm a competitor. In electronic games I'm at least starting off on an even footing."

How we react to the games is largely a matter of personality. Some people unwind with video games, getting the relief and relaxation from them after a hard day's work they might otherwise seek from a pitcher of martinis or a couple of hits of Valium. Others take out their hostilities on the games, lashing out at armies of Space Invaders instead of at their wives. Still others view the games as exciting challenges, finding themselves mentally and physically exhausted after they've finished.

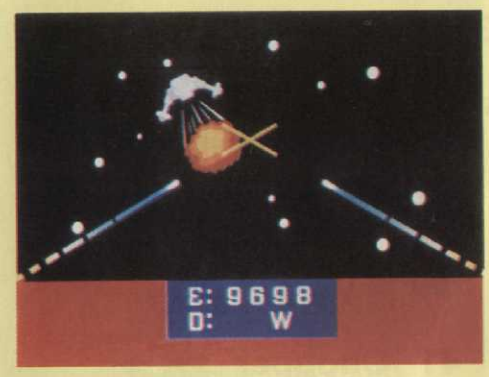
Above all, whatever the social critics might say, home video games are fun. Make that *expensive* fun. The first investment you must make is in the game console, which can cost from $60 for a factory reconditioned Fairchild "Channel F" system to about $300 for the multi-faceted Astrocade system. And that's only the beginning. Each game cartridge you purchase will set you back another $20 to $30 on the average. To tell you what you are buying and help you spend your money wisely are the major purposes of this guide.

Editor's note: Roger Dionne's Buyer's Guide to Home Video Games, 1983 *contains critiques of some 231 game cartridges presently on the market. We have selected 19 of those and, in slightly abridged form, present them on the following 13 pages. Each critique is broken down into three categories: description, strategy and variations. There are also ratings from 0 to 10 for interest (how long a game holds a player's interest) and skill (the degree of challenge the game offers), the scoring goal (when you can consider yourself proficient at a game), and the price.*

Starmaster *(Activision)*

Al Miller's Starmaster, which can be played on color sets only, expands the space pilot motif so well executed in Imagic's Star Voyager and Intellivision's Space Battle. Here, the player is the sole defender of four starbases under attack from as many as 31 enemy fighters, depending upon the difficulty level.

The game is played in a 36-sector galaxy. The player can see sectors other than the one he's in by flicking the color/black-and-white switch on the VCS console to activate his galactic radar. The radar displays the location of the player's space ship, the starbases and all enemy fighters. A player can warp to any other sector by moving a cross on the radar screen to the sector he wishes to go to, then pressing his action button. Once he gets to this new galaxy, the player must maneuver the ship to knock out the enemy fighters with his twin lasers while dodging their blasts. Here, as you're hit, you don't just get wiped out—instead, your radar or warp engine is damaged or your lasers or protective shields get blasted away. Your Mission/Attack Control Computer gives you a readout of your remaining energy, elapsed mission time, damage status and the energy required to warp to another sector. When you've sustained all the damage you can bear, you have to warp back to starbase and get repaired before you can fight again.



Interest rating: 7
Skill rating: 8
Scoring goal: 9,000 points
Price: $31.95

Strategy

High scores in Starmaster demand peak efficiency. Go after the enemy ships closest to one of your starbases. Don't waste shots or time—they both consume energy. When you've destroyed all enemy fighters in the sector, check the radar screen, and unless another starbase is under serious attack or your ship has sustained serious damage, hop to the nearest sector of the galaxy containing more enemy fighters.

The fewer dockings you need, the better your score. The fewer star bases destroyed and the less time elapsed, the better your score. A warning siren sounds when enemy fire damages your ship, and a yellow hazard light comes on when your energy supply dips below 1,000 units. (You begin with 9,999 units.) If you aren't on your way already when your ship's energy supply drops below 1,000 units, retreat to a starbase immediately.

Variations

There are four difficulty levels of Starmaster, determined by the number and speed of enemy fighters and the speed of meteors during warp travel.

From Roger Dionne's *A Buyer's Guide to Home Video Games* (a Banbury book)

Star Strike *(Mattel)*

This game combines fine graphics and complex objectives and creates complete boredom. What Mattel has here is a flop.

The player pilots a dark blue spaceship over a large, moving green trench out next to the moon. Peeking out from behind the moon is a sliver of our very own planet Earth. Instantly, two enemy craft rise from the bottom of the trench to attack the ship. Now, the problems start. Whether the enemy fire hits our hero or the player hits the enemy is a hit-or-miss affair. The player's lasers always go to the same spot in the center of the screen and even when it seems one has been hit, fairly often no hit registers.

Occasionally, a red target that looks something like a bathtub plug (don't confuse it with the shadows of the space ships) moves down the trench toward the viewer. With the slowest bombs in spacedom, the player tries to hit the targets. If he hits five, he has saved Planet Earth from destruction and the enemy space trench (and the moon) crumbles into nothingness. If you crash, get shot down, irreparably damaged or miss those red targets for too long, Earth slides out from behind the moon and gets destroyed in one mighty explosion. Game over.

Interest rating: 2
Skill rating: 4
Scoring goal: 7,000 points
Price: $34.99

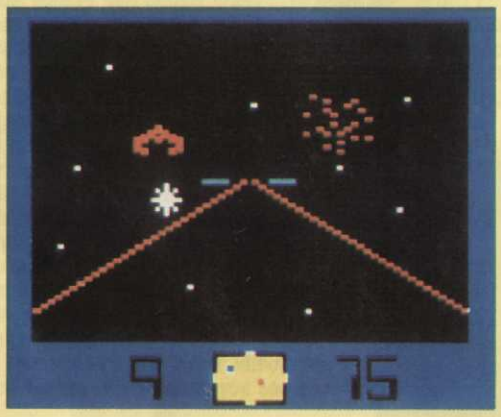
Strategy

Fly outside the green trench and the enemy ships have a hard time hitting you; however, the red targets are easier to hit the closer you are to the floor of the green trench. Take a chance. A couple of hits won't destroy you, and a little damage is worth sustaining if you can bomb another target and get the game over with.

Variations

The identical game may be played at six difficulty levels. The first three are unbearably easy, the last two exasperatingly difficult. Thus, Game 4 is the least unenjoyable.

Star Voyager *(Imagic)*



Interest rating: 9
Skill rating: 9
Scoring goal: 208 points, thus achieving the rank of Admiral.
Price: $31.95

Star Voyager is a sensationally realistic home video game. The TV screen is your porthole and weapon sight looking into outer space. Below the porthole is an instrument panel, which includes an energy reserve gauge, a gauge computing the number of enemy ships destroyed, and a radar screen to help you find your way home to Capital Starport through the seven portals and to help you spot enemy ships determined to stop you from reaching home.

Star Voyager is highly challenging. The object of Star Voyager is to complete your journey through the seven portals while downing enough enemy ships to reach the rank of Admiral. Each enemy casualty is worth five points, each portal is worth ten. As soon as you get started, four beeps signal the approach of an enemy ship. Locate it on the radar screen and try to get the devilishly evasive ship in your sight. Each of its hits depletes 16 of your energy units. Each of your own photon torpedoes uses up one unit, and lasers use up ten. Engage the enemy or escape (not easy) and you use up energy.

A variation on the theme from *Close Encounters* signals that one of the seven portals is nearby. First you see it blinking on your radar screen, but getting through it isn't simple. Sometimes you never find it, sometimes it just flashes past. If you get through it your energy supply is recharged, but if you miscalculate, you crash into it and come to an untimely end.

Strategy

Begin with the right difficulty switch in the 'A' position so that you are firing lasers. They use 10 units of energy but are more than ten times as effective as your photon torpedoes. Fire quickly. Don't give the enemy a chance to hit you because each hit costs you 16 energy units. If your energy supply gets low—say, 30 units—switch to one-unit torpedoes and head for a portal to recharge.

Variations

The Star Voyager cartridge has three interesting variations. You can play against an opponent commanding the enemy ships, against the computer or you and a partner can join forces against the computer. This last variation is the most enjoyable variation of all. Here, one of you navigates the ship, while the other controls the weaponry. Once you become admirals, you might move the left difficulty switch from A to B, which accelerates enemy attacks and star portal appearances.

Astrosmash *(Mattel)*

Astrosmash is a marvelous game. From the start, you can rack up thousands of points—and that's always fun—yet to become an expert (get up into those six-figure scores), you must practice for hours.

It's a starry, peaceful night when you man your laser cannon for the first time, but then the meteors start falling. If they hit your cannon—the first of the original five you possess—they destroy it in an orange detonation and cost you 100 points. If a meteor reaches the earth safely, you're docked 5 or 10 points, depending upon its size. Some of the meteors float slowly toward earth and others plummet, but it's easy to avoid them and pick up lots of points.

Just when you decide this is too easy, new dangers appear in the sky—whistling, spinning bombs—that will destroy your laser gun if they land anywhere, then beeping guided missiles that zero in on you, sometimes even after they've landed on earth. If you fail to knock these out of the sky, often your only recourse is to go into hyperspace.

At 1,000 points the sky turns bright blue, you're awarded another laser gun, and all scores double. However, the celestial debris gets denser and falls faster. You gain a new laser gun every time you reach another 1,000-point plateau. At 5,000 points the sky turns purple, and the scores triple. At 20,000 points it becomes a shimmering turquoise, and the scores quadruple. But now, the meteors and bombs are falling in a torrent and a new enemy appears in the heavens—a UFO that blasts your gun with deadly accuracy.

At 50,000 points, the sky turns gray, and everything is worth five times the base score. At 100,000, it turns black again, everything is worth six times the base score, but the sky can barely be seen through the maelstrom of meteors, spinning bombs, guided missiles and UFOs.

Strategy

Use auto-fire rather than single-shot; it will save a lot of wear and tear on your thumb. Shoot all meteors as quickly as they appear; you must be aggressive to reach high scores. Do not try to get under a meteor that's very close to earth. Even if you destroy it, it may shatter your gun at the same time.

Always go after the spinning bombs—even if you risk being hit by a meteor in the process—because if a spinner lands, that destroys your gun anyway.

Guided missiles are tricky but not impossible to hit. The time to hit them is when they veer toward you. When they land on earth your only escape is the hyperspace key.

The UFOs are big, easy targets, which always appear from the left or right edge of the screen. Fire instantly, before it starts firing at you. If you miss, zip to the opposite end of the screen, which confuses it. Or try hyperspace.

Variations

Astrosmash may be played at four difficulty levels, determined by the speed of the action. The first three levels you should consider as practice. The top level is the real game.

Interest rating: 9
Skill rating: 7
Scoring goal: 400,000 points
Price: $29.99

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The graphics and sound effects are sensational. Your biggest reward will be when you see your sales soar.

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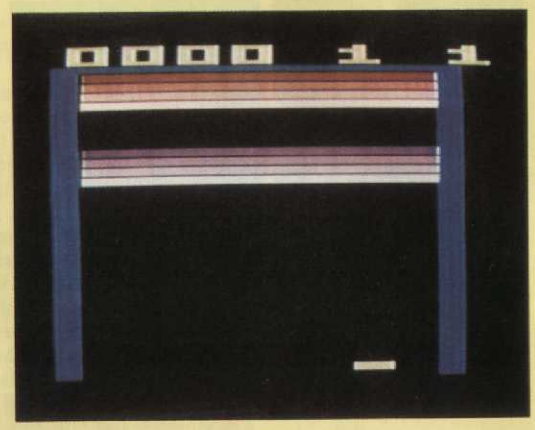
Super Breakout *(Atari)*

Super Breakout is far from a super version of Breakout. Atari has added several frills to the original that make it easier to get a big score and (except for the "Progressive" variation) less interesting as a game.

There are eight rows of bricks in Super Breakout instead of the original's six. The ball starts off more slowly than in the original, doesn't speed up until it hits a brick in the fifth row, and even then doesn't travel very fast. An average player should be able to keep it in play almost indefinitely, which is possible in this game since the walls keep reappearing. The game's only improvement is an electronic medley that sounds when balls hit bricks. These can get pretty frenzied when the ball is bouncing around on top of the wall.



Interest rating: 4 (7 for Progressive)
Skill rating: 5
Scoring goal: 3,500 points
Price: $31.95

Strategy

The best strategy for beating Super Breakout is the same as for Breakout—forge a breach in the wall early and get your ball through it.

Variations

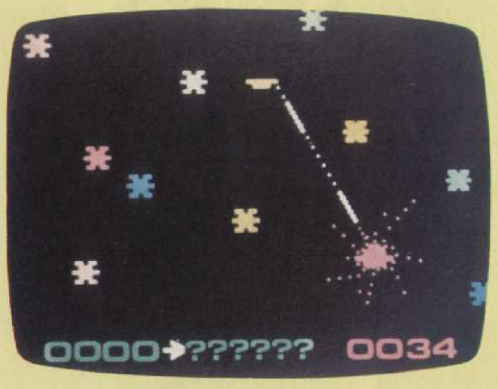
Children's: Forget it—it's too slow. The game may be a good baby sitter, but that's about all.

Doubles: The player plays two balls at once with two paddles positioned vertically one above the other. Surprisingly, two balls and two paddles make the game much easier because a turn does not end until you've missed both balls. Brick values double while two balls are in play.

Cavity: You play three balls at once, two of which are locked in "cavities" in the wall until the player breaks through to them. Brick values double when two balls are in play and triple when three are in play.

Progressive: This is by far the most interesting variation of Super Breakout. In this one-player game a space divides the bottom four rows of bricks from the top four rows, and as the game proceeds, the rows move, at first slowly and then faster, toward the bottom of the playfield. After they've descended far enough, a third set of rows begins at the top of the playfield, then a fourth, and so on *ad infinitum*. With bits and pieces of three and sometimes four walls on the playfield, the ball can take some pretty wild bounces. This game makes the cartridge well worth purchasing.

UFO *(N.A.P.)*



Interest rating: 8
Skill rating: 7
Scoring goal: 500 points
Price: $32.95

This UFO is a colorful, fun game of evasive tactics that shouldn't be confused with APF Electronics' UFO. Your spaceship is caught in the middle of a field of UFOs that, for all the world, look like Fruit Loops. The game faintly resembles Asteroid in that you can move in any direction and your ship is surrounded by a protective shield. You can destroy any UFO with a shot from your laser or by running into it with your spacecraft. But doing this drains your protective shield, cuts your speed in half and leaves you vulnerable to destruction until your craft's shield and engine regenerate themselves. Any contact with a UFO will cause your ships to sizzle, turn bright green and finally explode.

Besides the Fruit Loop UFOs, there are two other types: spinning objects which slowly stalk your craft and "light-speed starships" which dart into view from the rim of space, their guns blazing. Destroying a Fruit Loop is worth one point; a spinning UFO is worth 3; and a light-speed starship is worth 10. Accumulate as many points as you can before the space-stalking cereals destroy you.

Strategy

Your only real threats here are the light-speed starships. They appear infrequently, announcing their arrival with a beep. When they do appear, you're simply no match for their deadly computer-guided missiles. So when a starship comes into view, *run!* Use the UFOs, which pose little threat to you, for cover and let them absorb the starship's missiles.

To accumulate points, stay in the center of the screen, using the UFOs for cover, and don't waste time on the one-point floaters. Attack the three-point spinners by crashing into them, then steer clear of everything until your protective shield regenerates.

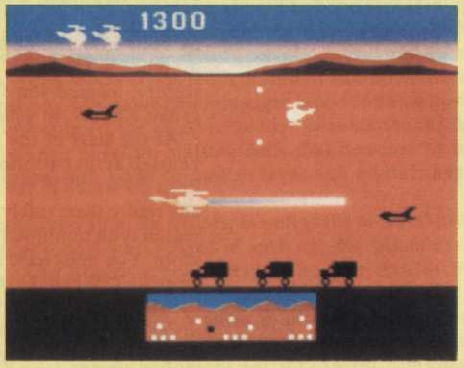
Variations

There are none, but the random disposition of the UFOs makes each game new and different.

Chopper Command *(Activision)*

Bob Whitehead designed Activision's clever Boxing, the beautifully realistic Skiing and the thoroughly original Stampede. Sadly, his new game, Chopper Command, is surprisingly derivative (Defender) and rather dull. The player flies a helicopter over what looks like the deserts of North Africa, defending a convoy of nine trucks from ten increasingly aggressive waves of enemy fighters and attack helicopters.

The playfield scrolls left and right, and the player is equipped with a scanner that helps him fix the positions of enemy planes and the truck convoy. You register 100 points for each helicopter you down and 200 for each jet. But, the big scores result from the bonuses after a complete wave of 12 enemy planes has been destroyed: 100 times the number of undestroyed trucks remaining in the convoy times the wave number. Thus, a bonus in wave 10 could be as high as 9,000 points.



Interest rating: 4
Skill rating: 10
Scoring goal: 50,000 points
Price: $31.95

Strategy

Whenever possible, engage the enemy over open terrain in order to reduce the number of trucks that might be destroyed during a battle. Since the enemy planes attack from the right, keep your helicopter to the left and fire at them as they enter the playfield. The enemy planes usually drop their bombs after making a U-turn. Get out of range as soon as they make the turn. If a plane exits the playfield to your left, watch out! It can return. If your scanner is clear, go after it so that you can devote all your attention to the planes approaching from the right once again.

Variations

Chopper Command may be played by one or two players at the "Cadet" level or the "Commander" level, and the players' lasers may be fast or slow. From wave three on, the Cadet level game is extremely difficult; the Commander level game is extremely difficult from the start.

Space Cavern *(Apollo)*

Interest rating: 9
Skill rating: 9
Scoring goal: 100,000 points
Price: $31.95

Apollo's Space Cavern is a winner! It's a terrific game visually, full of exciting, fast-paced action that gets faster, more exciting and more difficult the longer you survive.

At first, the flying electrosauri are mild foes. The three breeds hover above, occasionally dropping gooey teardrops that can sizzle you on contact. Presently, though, you discover the electrosauri have very dangerous allies—black, magnet-shaped marsupods, who crawl along the floor at you. They can sizzle you too, so you must zap them before they reach you. Fortunately you can fire in three different directions with lightning speed.

As the game progresses, the electrosauri flutter around the cavern more rapidly and, randomly, their deadly goo falls more frequently, and their marsupod allies become swifter and more aggressive. When you reach 20,000 points, you receive a new man (you start with four), but now two new types of electrosauri appear from the dark reaches of the cavern—tiny creatures who are harder to hit and bomb you unrelentingly. When you approach 50,000 points, you are spinning your gun in three directions, firing non-stop, dodging the tear drops, eliminating the marsupods, until eventually your last man is sizzled. He glows, reaches his arms to the heavens, turns black, and that's the end.

Strategy

This game tests your peripheral vision. Concentrate on the electrosauri and their tear drops, shooting as many as you can for 165 points apiece, but as soon as you spot a marsupod from the corner of your eye, creeping from his lair, zap him. Never move too close to the sides of the cavern because a marsupod will appear and sizzle you before you can react. Stay close to the middle of the cavern floor, and move only to avoid their fatal tear drops.

Variations

There are 48 variations of Space Cavern in all. In some games there are no marsupods. In some games only two electrosauri appear at once, while in others four appear. In some games the electrosauri's electro-molecular charges (those are the tear drops) fall in random directions rather than straight down. These various combinations of dangers can appear at three difficulty levels, and at each level everything can be made to move doubly fast by moving the difficulty switch from B to A. It will take a long time for someone to decide this game no longer offers a challenge.

Haunted House *(Atari)*

It's hard to get excited about a game played mostly in the dark. In its progressively more difficult phases—games 3 through 9—Haunted House is primarily a game of memory and logic. However, at the higher levels it becomes increasingly difficult to avoid a tarantula, a vampire bat and a particularly hideous ghost, who reduce your nine lives by one each time they touch you. Their approach and sting is accompanied by bolts of lightning and claps of thunder, and even when they don't get you, their presence in the same room causes your match to go out. If you're armed with the sceptre, located somewhere in the house, these beasties can't harm you (except in games 8 and 9, in which the ghost is invulnerable).

At the start of the game you, represented by a pair of wide, dice-like eyes, find yourself at the entrance to a pitch-black, four-story haunted house, with six rooms to a floor, in search of the three pieces of a broken urn. Your objective is to find all three and return them safely to the house's entrance. Initially all you have to help you in your search is an unlimited supply of matches—though the more you use the poorer your score. You must have a match lit to retrieve any object even when you know precisely where it is. When the screen is completely black, you can keep track of your location by the sound of slamming doors and of your footsteps on a staircase. A number at the lower left of the screen keeps you informed of which floor you are on as well as of the number of lives and matches you've consumed.

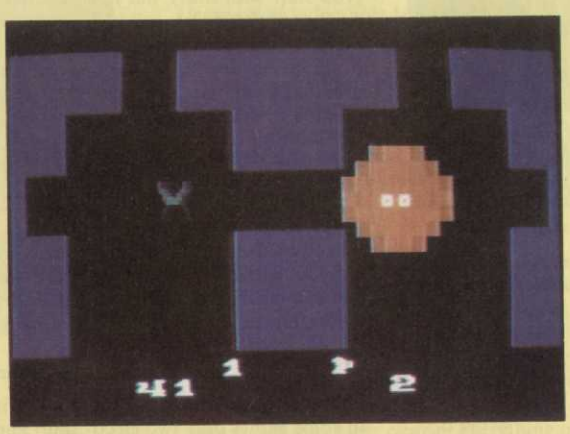
So far, so good. Trouble is many of the doors in the haunted house are locked. Your first task, therefore, is to find the master key, stashed away somewhere in the darkness. But then another difficulty arises. You can carry only one object at a time. So when you have the key, you can't have the sceptre to protect yourself from the beasties, and when you find a piece of the urn, you have to drop the key. Now you bump into a locked door. If all exits are blocked, the only alternative is to drop the urn fragment in a convenient location, retrieve the key, unlock the door, drop the key, retrieve the fragment, and so on until you get all three urn fragments together and have forged an open escape route.

Strategy

You almost need to take notes to keep track of things in this game. First, you must take a survey of which doors are locked and which aren't. The locked doors emit a unique sound, different from the sound made when you bump into a wall. Equipped with the key, you must jockey back and forth between urn fragments and the key, moving everything painstakingly toward an open exit route. At the same time, of course, you must be wary of the tarantula, bat and ghost, who get more and more bothersome as the games get more difficult. The location of all the objects varies from game to game. Consequently, your plan of operation must also vary, and there is no single solution to any of the games.

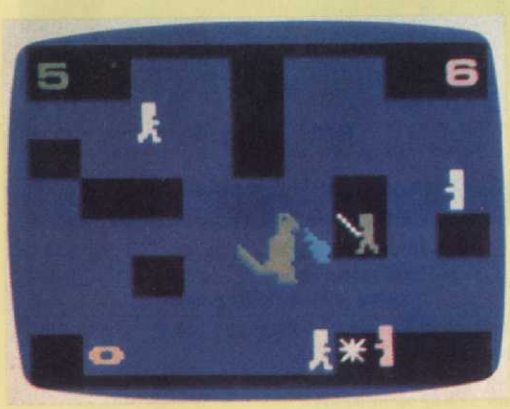
Variations

Of the nine versions of Haunted House, the first is the easiest. The walls are lighted, and no doors are locked. In the second, everything is dark, but once again no doors are locked. From the third game on, things get quite difficult with locked doors and more and more creatures scurrying after you. In the last three games, the vampire bat can cause you to lose objects, and in the ninth game the floor plan of the haunted house is different and its five denizens can get at you even through locked doors. In games 8 and 9, the ghost cannot be repelled with the sceptre.



Interest rating: 5
Skill rating: 9
Scoring goal: Retrieving the three pieces of the broken urn in game 8.
Price: $26.95

The Quest for the Rings *(N.A.P.)*



Interest rating: 5
Skill rating: 5
Scoring goal: Capturing 10 rings in 30 turns.
Price: $49.95

In The Quest for the Rings, Odyssey's designers have created an elaborate mythology for a very basic game concept in a very basic electronic game environment. The myth, fancifully embellished in the instruction booklet accompanying the game, is that a small band of legendary heroes is wandering among 23 castles in a dark land controlled by an evil ringmaster. The band is searching for ten sacred rings, which the ringmaster has hidden somewhere in his castles. The heroes—warrior, wizard, phantom and changeling—have special powers, but the rings are guarded by orcs and firewraiths, whose touch is death, and by fire-breathing dragons, spydroth tarantulae and marvelously named doomwinged bloodthirsts, who delight in devouring living flesh. Furthermore, the rings are hidden beneath the castles within four types of labyrinth—dark dungeons, shifting halls that conspire to block the heroes' advance, red infernos with walls of molten lava, and crystal caverns with invisible walls.

The quest sounds exciting. In reality, the heroes, as well as the orcs and firewraiths, are the same little Odyssey² robots who starred in such age-old games as Take the Money and Run, Hockey and Soccer, among others. The four lavishly portrayed labyrinths are only variations of the same simple maze.

The warrior has a sword which instantly obliterates orcs and firewraiths but has precious little effect on the other, more dangerous monsters. The wizard casts spells—little puffs of light—which work exactly as does the warrior's sword. The phantom can walk at half-speed through the rectangles of all the mazes except the infernos, and the changeling can become invisible so monsters completely ignore him unless he happens to bump into them. A hero's special power is activated with the action button.

At the start of The Quest for the Rings, either the computer or a player (the ringmaster) hides the rings and two other players, who will work cooperatively, select which heroes they want to be. The whole game consists of their starting at the center of a maze 50, 75 or 100 times and trying to find ten rings before they run out of incarnations.

The orcs and firewraiths are pushovers for the heroes, but the other monsters are just above invincible and must be outwitted rather than overcome in combat. These monsters are the game's best feature. For example, there is the dragon, a big, smoke-breathing, green fellow with a floppy tail who incinerates in a puff of fire any hero who gets too close to him and then gulps him down. Even better than the dragon are the spydroth tarantulae and the doomwinged bloodthirsts, who always appear together.

The ringmaster hides the ten rings in ten of the 23 castles on the map and then positions dragons to guard three of the rings and tarantulae and bloodthirsts to guard three others. Once that's been done, the other two players, acting as heroes, move from one castle to the next on the map. Wherever the ringmaster hides the rings, the heroes will encounter dangerous monsters in six labyrinths and capture rings in four additional labyrinths. The ringmaster can make a dragon pursue fleeing heroes, but it would be silly of the heroes to give him the opportunity to do so. He also has the power to "possess" one or another of the heroes a few times during the course of the game by taking over his controls and then making things difficult for the other hero, but that's just a trick to give the player acting as ringmaster a false sense of participation in the game. If the two heroes capture the ten rings in 100, 75, 50 or however many turns the players agree upon, the heroes win; if they fail to do so, the ringmaster is the victor.

Strategy

The ringmaster makes three strategic decisions: where to hide the rings, when to use his limited opportunities to possess a hero, and which of the two heroes to possess. First, he should avoid hiding rings in the dungeons—they're the easiest labyrinths for the heroes to get through. The hardest are probably the shifting halls. Next, the ringmaster should possess one of the heroes immediately. Since the game starts at turn 1 and cannot by the rules go into negative numbers, the ringmaster has the chance to get the heroes docked five turns right at the start without worrying about giving them a five-turn bonus. He should also save a possession for close to the end of the game. If it looks like the heroes will capture ten rings in their allotted turns, he can possess one of them and cost them enough turns to put them over the limit.

The other players' main decision is which combination of heroes they will be. A team made up of the phantom and the changeling has the best chance in most situations. The phantom can draw the monsters to him while he hides, fully protected in a wall; meanwhile, cloaked in invisibility, the changeling can find a safe route to the ring. However, the phantom is pretty useless in the shifting halls, whose walls are constantly changing, and in infernos, whose walls will fry him.

Variations

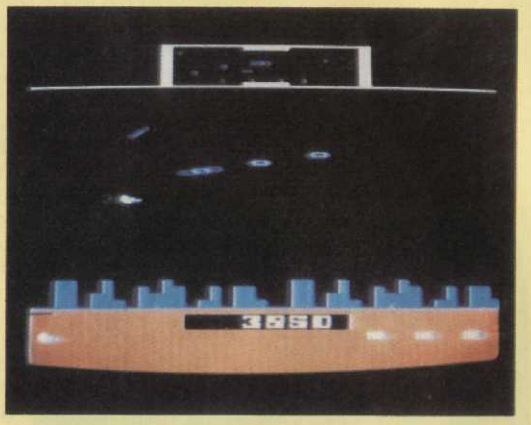
A third player is not really needed. The players can hide the rings or they can allow the computer to hide them for them. One player can also play the game, directing both heroes, though playing it alone is not always easy.

Defender *(Atari)*

Though it doesn't have the three-dimensional quality of the original, Atari's Defender preserves all of the ingredients of the arcade game. The various enemies are not quite so viciously clever as in the arcade game, but Defender has its usual firepower—lasers and smart bombs. The player also has a scanner to keep track of off-screen action and a hyperspace option.

The object of the game is to score as many points as possible by destroying aliens and saving humanoids. After each 10,000 points, the player receives an additional rocket and smart bombs. Like Intellivision's Space Battle, the battle in this game is going on both on and off the screen. Defender has a huge spacescape to survey, which seems to stretch out the sides of the television set and which scrolls into view when your rocket races to the left or the right.

Because of the reduced number of controls—just the customary joystick and action button—players detonate smart bombs by flying down into the city and then pressing the action button. They go into hyperspace by moving behind the scanner and pressing the action button. This latter option takes some getting used to. You have to be particularly careful when you're flying at the top of the playfield, firing at the enemy. You might develop the habit of ducking behind the scanner, and then when you press the action button, instead of zapping a lander or mutant, you find yourself popping up in a different part of space.



Interest rating: 9
Skill rating: 10
Scoring goal: 200,000 points
Price: $37.95

Strategy

In the early rounds, go for the landers. When you hear a tinkling sound, locate the kidnapping on the scanner and rush to the rescue. You are limited to shooting your laser missiles horizontally only, while the enemy can fire at you from any direction. However, your lasers are extremely fast, while their missiles are slow. And you have reversing capability. Use your limited mobility to approach enemy targets from a safe direction, then blast away. In later rounds, you have to react instantly; move very fast, and shoot at everything in sight. Note that the rocket continues to drift a bit in the same direction after you've thrown it in reverse, a peculiarity which can be disastrous if you don't take it into account.

Variations

As though Defender weren't difficult enough, you can play with the mutants and baiter traveling at a faster speed and the humanoids falling from landers at a faster speed. You can also play with nothing but mutants present, and you can start with the third or fifth wave of aliens instead of the first. In the other direction, you can play a slow children's variation. There are twenty games in all, for one or two players.

Demon Attack *(Imagic)*

Interest rating: 9
Skill rating: 8
Scoring goal: 10,000 points
Price: $31.95

Imagic's first game was a terrific debut. Three pterodactyl-like demons hover elusively in space shooting bombs at the player's firebase. Each time the player destroys a demon, a new one whooshes out to replace him. Destroy eight and a new, more dangerous wave of demons takes up the attack.

From the fifth wave on, each time a demon is hit, it splits into two smaller birds. Though only one of the birds is aggressive, when the attacking bird or his sibling is hit, the other chirps angrily and does a kamikaze dive for the player's firebase. If the bird's hit, another chirping bird attacks, and then still another.

Beginning with the ninth wave of demon attackers, things get really intense. The demons' bombs and lasers bend toward the player's firebase.

Strategy

Since only one of the attacking demons is aggressive, simply avoid it and concentrate on knocking off the others. Destroying the aggressive demon does no good—it's immediately replaced by another. The best way to zap a bird homing in on you (which is worth the most points when hit) is to remain stationary as it flutters toward you and wait for your best shot. If you miss, you can usually escape to the side of the playfield as the bird crashes harmlessly into the ground.

Variations

Though there are ten programs on the Demon Attack cartridge, there are really only two games—the basic one just described and the same game in which the player can steer his shots. Games 5 and 6 allow you to go directly to the ninth wave.

Yar's Revenge *(Atari)*

The hero of Yar's Revenge is a huge house fly—at least, it looks, sounds and buzzes around like a fly. The game begins with that fly facing a great red shield, which our hero attempts to breach, cell by cell, either by firing energy missiles into it or by chomping noisily away at it. The fly's objective is to expose and destroy the Qotile lurking behind the shield. It cannot destroy the Qotile with its energy missiles, but either by eating a piece of the shield or touching the Qotile directly brings on a single-shot Zorlon cannon, the weapon that can blast the Qotile into a psychedelic, Scotch-plaid heaven. The second round finds Qotile embedded in a red, mercuric rectangle; in the third, it's back to the red shield of the first round; the fourth is a reprise of the second and so on . . . and on. Yar's has fine graphics and sound effects, but suffers because of this repetition.

To play, you control the fly's movements, energy missiles, and the cannon with your joystick and action button. The fly can move up, down, left or right. It can also exit from the top or bottom of the playfield to reappear on the other side. When the cannon is brought in, your action button controls its single shot, not the fly's missiles.

At the start of each round the Qotile, which looks like a bleached, evil-eyed tear-gas mask, releases a destroyer missile that stalks the fly wherever it turns. However, the missile creeps along slowly enough not to pose a serious threat, and the fly can always escape into a neutral zone, a wide band of brilliant colors that crosses the center of the playfield.

The swirls are a much more serious threat. Periodically, the Qotile spins itself into a fiery ball—a swirl—and then flings its destructive fury at the fly. Players get four flies per game.

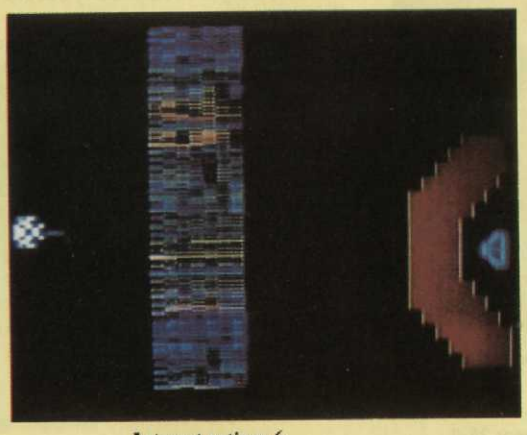
Strategy

Fire non-stop at the Qotile's shield and keep your distance from the destroyer missile. Anytime Qotile becomes a swirl, race to the left side of the playfield and wait. When the swirl comes at you, you should be able to dodge it without much difficulty.

As soon as you've opened up the shield enough to get in a shot with the cannon, gobble a piece of the shield. The cannon appears on the left. The Qotile and the remnants of its shield are moving slowly and rhythmically up and down on the right. Line up the fly and the cannon for a well-timed shot, then fire. Get your fly out of the way, taking care not to race him so far around the wrap-around playfield so that he runs right into his own missile. If you miss, try again.

Variations

There are eight games, each for one or two players, but the advanced games are not much more difficult than the basic game. In one game, there is only one shield configuration. In another, there are two. In a third game, the cannon shots bounce off the shield. Finally, in "Ultimate Yars," the fly has to perform some special antics, mainly bouncing off the left side of the playfield, before the cannon appears.

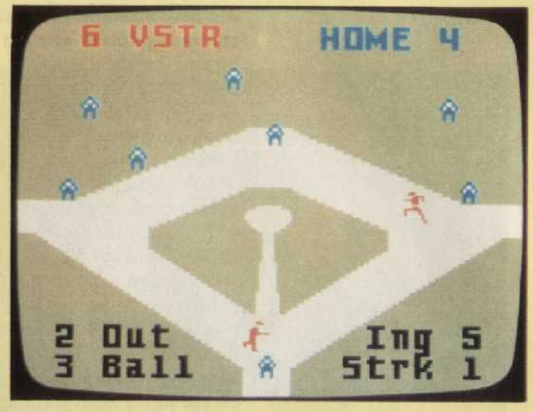


Interest rating: 6
Skill rating: 5
Scoring goal: 200,000 points
Price: $31.95

Major League Baseball *(Mattel)*

To true afficionados, baseball is the most aesthetic sport. It would seem ideal to transpose into a video game, but this has not been the case until this cartridge came along. Not only is Major League Baseball head and shoulders above the competition, it is one of the best, if not *the* best, sports cartridges on the market.

Major League Baseball differs from real baseball in only a few ways: a batter can't hit a fly ball (except for a home run), and is never struck by a pitch. If a runner crosses the plate before the third out is made, the run counts. And with two or more men on base, only the lead runner can move off the bag and steal. All runners automatically advance one base on a base hit, but then, at the player's discretion, only the lead runner can continue. That's it. Every other aspect of the summer game has been programmed in. Managers at the joysticks, you can have your players bunt, steal, hit-and-run and, on defense, go for a fielder's choice, turn the double play, pick a runner off the bag and catch a runner in a rundown. And when a player is out, a frog-voiced umpire croaks, "Yer out"; when a run scores, the crowd cheers. Games last nine innings unless the score is tied, in which case they go into extra innings, of course.



Interest rating: 10
Skill rating: 8
Scoring goal: Shutting out your opponent.
Price: $29.99

Strategy

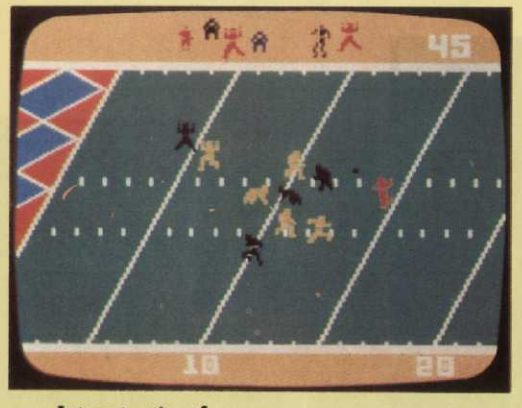
There is the old baseball adage: Keep your eye on the ball. This is impossible in Major League Baseball unless you have thoroughly memorized the position of the player keys on your hand control. The same goes for when you're on defense. If you can't remember which player to send after the ball when it is hit, then you'll have no defense. Here's a trick: When trying to get a runner at the plate or third base, use the cut-off man—it's quicker.

On offense, just wait for your pitch, and depending upon the quality of your opponent's defense, run the bases aggressively.

Variations

The game can be played at four speeds called Spring Training, College, Triple A and Major League. At faster game speeds, everything speeds up—the pitches, hit balls, thrown balls, base runners and fielders.

NFL Football *(Mattel)*



Interest rating: 5
Skill rating: 4
Scoring goal: Defeating your opponent 28-0.
Price: $29.99

Played on the longest, narrowest football field in the electronic world, NFL Football is a realistic, tactical game. Though the screen shows only twenty yards of the field at a time, and the teams are comprised of only five players each, one of whom, the center, plays no active part in the action after the ball has been snapped, there is plenty of room to carry out one of the 160 possible plays that may be keyed into the computer.

Apart from the long field, Intellivision's Football is not greatly different from other electronic football games. The defensive player punches in one of nine defensive formations, which may be changed right up to the time the ball is snapped. The player on offense keys in his play—pass plays involve four steps before the ball is hiked—and then tries to execute it. You control the quarterback before a pass is released and then the receiver. On defense, you control one of the defensive backs.

The major difference between this game and other TV football games is that the player keys in the location of an intended pass before the play starts. Thus, he does not have to aim his passes, just time them properly and get his receivers to the right spot at the right time. This feature makes NFL Football easier to master than some other football cartridges.

A game consists of four simulated fifteen-minute quarters with the teams changing sides each quarter. The visiting team starts with the ball on its own 20, and the home team gets the ball on its 20 at the start of the second half. There are no goal posts. A field goal attempt is judged good if it has enough distance to it.

Strategy

To win, you need a good passing game. Since the defending back controlled by your opponent can cover your single intended receiver without much difficulty, you should run a variety of routes to keep him guessing. Against a good defender, short passes are likely to be more successful than long ones.

Variations

NFL Football can be played at four speeds.

Grand Prix *(Activision)*

You're in your Formula One, the engine is revving, you push the action button and you're off. You steer with your joystick to avoid slower cars and try to do the track in record time, which is displayed on the lower left of the screen—right down to sixtieths of a second!

The bridges on the longer tracks and slippery oil slicks are no particular problem, but those slower cars are a real hazard. When you hit one—and you'll hit plenty—the crash and the flashing orange make you feel like the car is exploding right inside your head. Each crash slows you down, so avoid these disasters by releasing your accelerator or, if you're desperate, push your joystick to the left and hit the brakes.

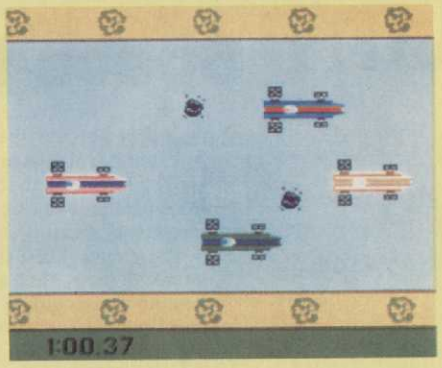
Strategy

Grand Prix drivers do trial runs to study every inch of the track they're going to race, and you should, too. Here, though (unlike in Intellivision's Auto Racing), the track itself is straight and what you must learn is when the other cars will appear. Memorization is the key. The more often you run each course, the more you'll recall when and where to expect the cars ahead of you, for you only have an instant to see them before you climb their backs. Once you crash, the cars' positions get scrambled, and each additional crash scrambles them further.

The Atari joystick is a serious detriment to enjoying this game to the fullest. Unless you have a custom controller, you simply can't negotiate your car properly. You're best off keeping to the extreme left or extreme right of the track (the top or bottom of your screen) except when avoiding a car.

Variations

Players can race on one of four tracks. The bridges are all identical and easily anticipated. (There's little traffic and a lot of oil slicks just before you reach them.) So the only real distinction between one program and another is the length of the race.



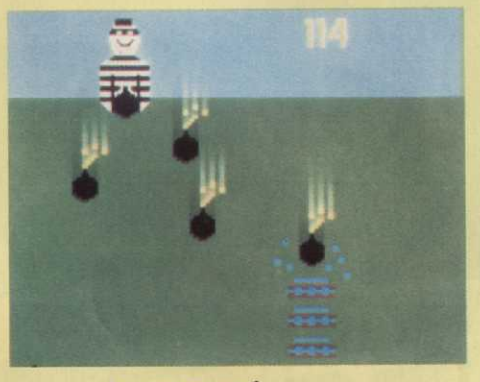
Interest rating: 5
Skill rating: 6
Scoring goals: Watkins Glen: 35 seconds
Brands Hatch: 1 minute
Monaco: 1:30 minutes
Le Mans: 2:30 minutes
Price: $31.95

Kaboom *(Activision)*

The little man is clearly quite mad. There he sits, a troll on a wall, smirk on his innocent, round face, mask over his eyes, wearing a jailbird jacket, and in his hands—why, it's a bomb! He's dropping a bomb!

But you're safe. You have a bucket of water—three of them, in fact—with which to douse the lighted fuse. Plop! After ten bombs he stops. You've survived. But he starts up again. Now it's 20 bombs he's dropping as he glides faster back and forth on his wall. Then 30 bombs—40, 50, 75, 100, 150 bombs falling faster and faster and faster. If you miss one its explosion sets off a chain reaction reminiscent of firecrackers on the Fourth of July, and now you're down to two buckets of water.

You score one point for each bomb you catch in the first group, two for each in the second, and so on up to eight points per bomb in the largest, fastest-moving group of 150 bombs. When you miss a bomb, the bomber gives you a break and slows down. Larry Kaplan, the designer of Kaboom, points out that this feature is handy when you're about to reach the 1,000-point plateau with more than one bucket still intact. Miss a bomb on purpose and catch enough slower bombs to get your third bucket back.



Interest rating: 6
Skill rating: 8
Scoring goal: 3,000 points
Price: $22.95

Strategy

Simple: Learn the bomb patterns.

Variations

If you're as mad as the bomber, you can cut the width of your buckets in half by flipping the difficulty switch to A.

Space Fortress *(Astrocade)*

Space Fortress does not require as much skill to master as many of the best games, but it is an altogether insidious game. You're in command of a stationary space fortress located in the center of the TV screen and the rest of the screen is dark except for a background of stars. You are equipped with a gun turret that can be moved instantly and that fires lightning-fast lasers.

The enemy—there is, of course, always an enemy—does not appear until you fire your first laser. Then an enemy ship pops up in one of the four quadrants. In a flash you move your gun in its direction and zap it. Fifty points. Another ship appears in another quadrant. Turn. Zap. Another 50 points. Now the enemy ships begin shooting big, rolling fireballs at you. You zap the fireballs for 25 points and continue to zap the ships for 50 points. But now a little space melody plays, and in zooms a kamikaze ship, spinning around the space fortress dizzily like a frantic bee caught in a bottle. It's the hardest enemy to hit and is worth 150 points.

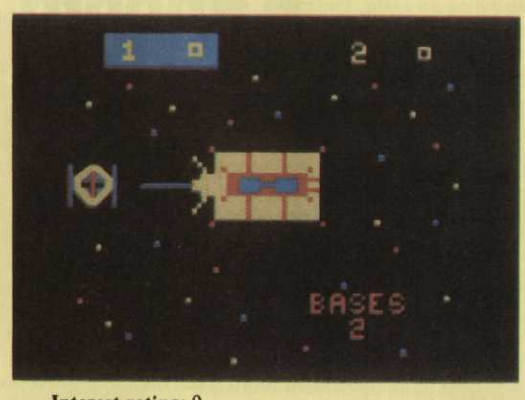
The more successfully you defend your space fortress the faster the enemy comes at you, sometimes shooting two, three and even four fireballs at a time, each of them from a different direction. The screen and loudspeaker on your TV becomes a marvelous cacophony of sight and sound, and if you're dexterous enough and a little lucky, you'll survive. Sooner or later, though, one of the fireballs or one of the kamikaze ships gets through, and you witness the most vivid, most colorful, most altogether spectacular visual display of any home video game.

Strategy

Shoot instantly every time a ship appears. When a fireball rolls out, take two quick shots to hit both the fireball and the enemy ship behind it before it vanishes. The kamikaze ship gives you plenty of time to hit before crashing into you. But it's fast, and its flight path is erratic. Fire slightly ahead of it, and don't try to chase it with your gun. If you're desperate, spin your gun around, firing a steady barrage of lasers. Chances are you'll score a hit.

Variations

One to four players may play, using from one to nine fortresses apiece per game and playing at one of nine levels of difficulty. As the difficulty level increases, the fireballs appear more frequently and the kamikaze ship flies faster and faster.



Interest rating: 9
Skill rating: 6
Scoring goal: 5,000 points per fortress at level 9.
Price: $29.95

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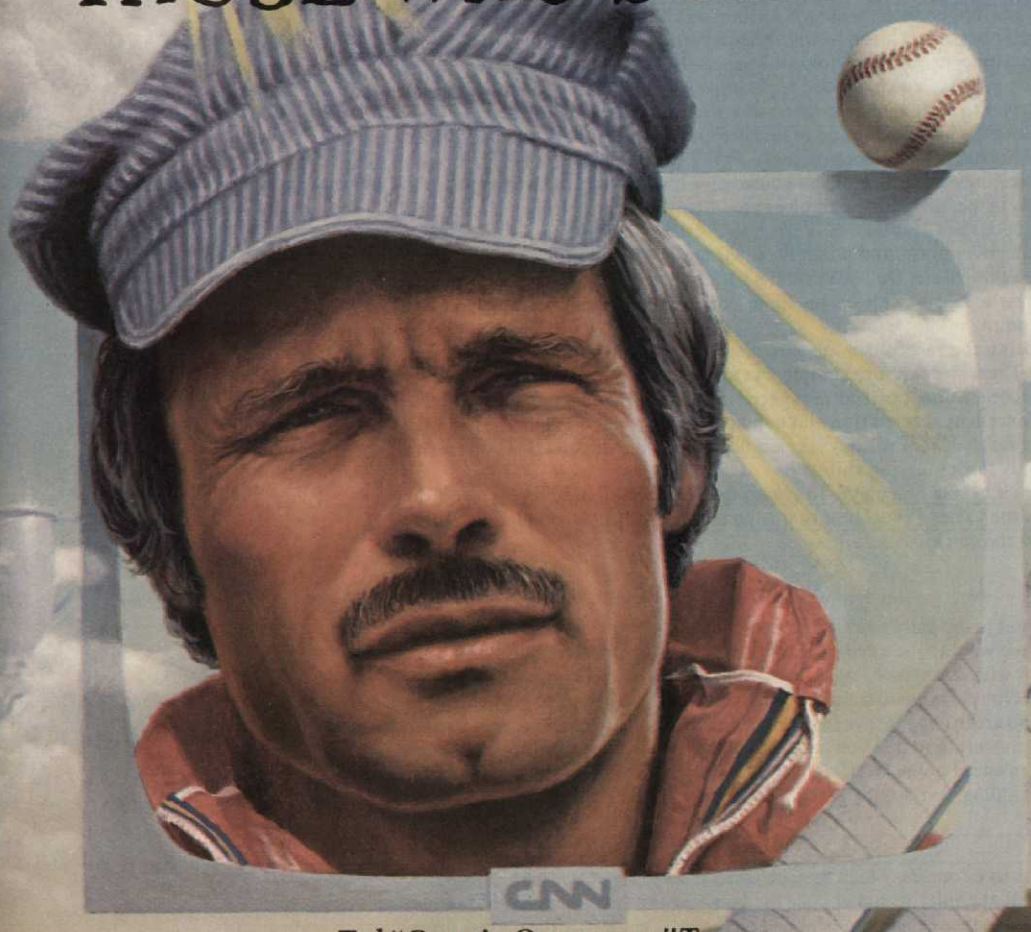
HERE'S TO GUT FEELINGS AND THOSE WHO STILL FOLLOW THEM.



Ted "Captain Outrageous" Turner

Ted Turner does lots of things people advise him not to do. And he succeeds at them. He turned Atlanta's WTBS-TV into a "Superstation" using a communications satellite and recently founded Cable News Network, the world's first 24-hour TV news network. He bought the Atlanta Braves and moved them out of last place; won the 1977 America's Cup after being fired in the '74 races; and was named "Yachtsman of the Year" four times.

Ted Turner puts his feelings where his mouth is. He also puts a great scotch there: Cutty Sark. And while he's been called Captain Outrageous by some, one thing's sure: Ted Turner's enjoying himself.

Lettick

The Scotch with a following of leaders.

CUTTY SARK®

Auto Racing *(Mattel)*

Intellivision's Auto Racing is in a class by itself. Players race their cars over one of five circuitous Grand Prix courses. The cars automatically accelerate to their maximum speeds. To negotiate the numerous corners, players must both steer with the direction disc and apply their brakes with the side buttons of the hand control judiciously, for only perfect steering and braking will get them around the course without mishap. Under-steering will force the car off the track; over-steering will cause it to spin out and possibly crash; precise application of steering wheel and brakes will allow a good driver to drift around corners at a winning speed. As the player moves through the course, he hears the sound of his accelerating engine and, when he brakes and corners, of his screeching tires.

The player sees only a portion of the course at a time, but there are maps of the complete courses in the instruction pamphlet accompanying the cartridge. If a car runs off the course, it does not automatically crash as in other racing games. It slows down when it is running over grass, and it barely crawls along when it's mired in one of the waterponds along the route. Only when it hits a house or a tree does it crash. Then the player must press a side button on his hand control to resume the race from the previous checkpoint.

Besides choosing the racecourse, players may select from five cars with different characteristics. The white car, for example, has a maximum speed of only 55 miles per hour and poor acceleration, but it corners excellently. The green car has a top speed of 65 m.p.h. with excellent acceleration and good cornering ability. While the fast blue and tan cars can reach 90 m.p.h., they accelerate poorly, a big drawback if you crash a lot, and have only fair cornering ability.

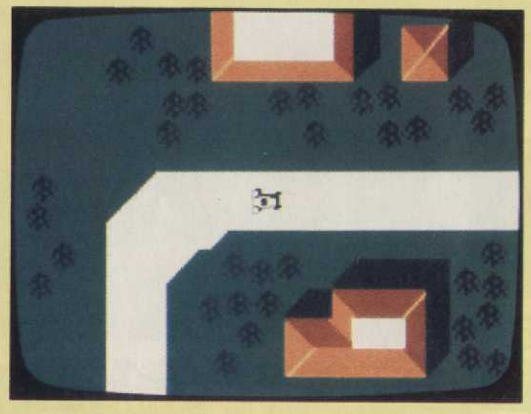
In two-player races, the first player to accumulate 50 points, based on his lead over his opponent at the various checkpoints during the race, wins. When playing alone, you race against the clock.

Strategy

Auto Racing is not principally a game of speed nor even of steering, but of finesse and timing. Races are won at the corners. Before starting, a top driver should be thoroughly familiar with every inch, every bend and corner, of the course. As a professional Formula One driver would do, find the best lines through each corner for the particular car you are driving. Move to the outside as you approach a corner, and time your braking and steering so that you come out of the corner at maximum speed. Then stay at maximum speed down all straightaways. Whether at corners or on straightaways, the less skidding you do, the better your time will be.

Variations

Auto Racing has five courses, which may be raced in any one of five cars. Normally, two players of equal ability would choose the blue and tan car, which have identical characteristics. But a race can be handicapped on the basis of the cars the players drive.



Interest rating: 9
Skill rating: 8
Scoring goal: Running a five-lap race in the tan or blue car without running off the course or crashing.
Price: $29.99

GAMER FEEDBACK

RIP IT OUT, or photocopy it. But let us know what you want to see and read. This is your magazine, Video Gamer, and you can be a part of VIDEO GAMES by taking a few minutes (when you're not saving the earth from total annihilation) to fill out the questionnaire below. The next issue of VIDEO GAMES will continue to report the Video Gaming news and views that interest you.

Please return to: **VIDEO GAMES Magazine, 350 Fifth Avenue, Room 6204, New York, New York 10118**

Sex: Male____ Female____ Age: Under 18____ 18-30____ 31-40____ Over 40____
Family Income: Under 14,000____ 14,000-21,000____ 21,000-39,000____ Over 40,000____
Education: High School Student____ Graduate____ College Student____ Graduate____ Advanced Degree____

Favorite Department in this issue:

_____

Favorite Feature Article in this issue:

_____

What I'd like to see less of:

_____

_____

What I'd like to read about most:

_____

_____

Favorite form of play:
____Coin-op Games
____TV Cartridges
____Computer Games

Favorite Arcade Games;
_____
_____
_____

Favorite T.V. Cartridges:
_____
_____
_____

Biggest Rip-offs:
TV Cartridges: _____
Arcade Games: _____

How did this issue of VIDEO GAMES compare with the first issue?

____The same ____Better ____Worse (go easy)

Why? _____

_____

Favorite computer-oriented magazines (if any):

_____ _____ _____

Other frequently read magazines:

_____ _____ _____

Which manufactures' products do you prefer in:
1. TV Games hardware_____
2. TV Games software_____
3. Home computers_____

Choose Pac-man's successor(s):
(Existing or made-up characters to replace Pac-Man)

_____ _____ _____

Great ideas and concepts for new games (or what you'd like to see in new video game products).* _____

_____

_____

*VIDEO GAMES Magazine promises not to sell any brilliant game concepts, submitted by readers, to the manufacturers.

P.S. Thanks for the terrific response to VIDEO GAMES' first Gamer Feedback (p. 67). Keep those cards and letters coming.

COLECO Has a Vision - Better Games for All

Best known for hand-held games and swimming pools, this toy manufacturer has suddenly set its sight on Atari and Mattel. But, is the industry big enough for the three of them?

By Steve Bloom

Let's start with a quiz. The name Coleco is an acronym for:

a) Colorado Leisure Corporation
b) Collegiate Ecology Group
c) Colonial Electronics Company
d) none of the above

If you picked "d" you're right. (I bet it was a hunch.) Clue: The company is located in the New England city that has a National Hockey League team named the Whalers. Too hard? Try this one: The state is bordered by Massachusetts, Rhode Island and New York. Connecticut! There you go.

The *le* is easy. It's the first two letters of what shoes are made of. Put the three components together and you have Connecticut Leather Company. Huh?

Strange as it may seem, Coleco—the company that has just introduced what promises to be the most ambitious, innovative TV-games system the industry has seen since Mattel's Intellivision—has its roots in leather. Fifty years ago, a Russian immigrant named Maurice Greenberg opened shop on Market Street in Hartford; he sold shoe repairing supplies. Today, according to his younger son, Arnold, who is the company's president and co-Chief Executive Officer (he shares the position with his older brother Leonard), Coleco is "a diversified, seasonally balanced manufacturer of recreation, information and entertainment products for the entire family—primarily for use at home."

Last year, the company had net sales of $178 million. With orders already in excess of 2.5 million units for its portable arcade series (which includes Pac-Man and Galaxian), Coleco is sure to push over the $200 million mark in 1982. But any predictions beyond that would be unwise. ColecoVision is why.

* * *

ColecoVision is being marketed as a "third-generation" programmable video game system. Assuming Atari's Video Computer System (VCS) and N.A.P.'s Odyssey² were the first and Intellivision the second (Astrocade's unit falls somewhere in between), Coleco's assessment appears sound. For $200 ($50 more than the VCS and Odyssey, $50 less than Intellivision), the package will include hardware capable of transmitting arcade-style graphics; a remarkably accurate version of the year's top coin-op game, Donkey Kong; two controllers equipped with joysticks, speed rollers and keyboards; and the chance to expand upon the system simply by plugging any of a number of modules that Coleco will provide into the front of the unit. The first of these accessories—Conversion Module #1—allows you to play Atari cartridges on ColecoVision as well.

As far as software is concerned, Coleco plans to offer plenty of it. The company has already made license deals with a host of coin-op firms (Sega/Gremlin, Nintendo, Universal and Exidy) for a variety of games, such as Turbo, Zaxxon, Spectar, Mouse Trap and Lady Bug, and will continue to be active in this area. Home-grown cartridges like Head-to-Head Baseball and Football, Skiing, Horse Racing, Challenger Chess, Tunnels & Trolls and even one based on the Smurf characters will also be available.

Coleco doesn't stop there. In addition to producing these games for its own system, the company has announced its intention to release a line of so-called "third-party software." In other words, both Intellivision and VCS owners will have the chance to choose from a number of the arcade

Photo by Lanny Nagler

HAWKING IN THE BOARDROOM: Coleco's president Arnold Greenberg with ColecoVision and Donkey Kong. Greenberg's father, the company's founder, watches over his shoulder. (Inset) An assortment of Coleco's '50s wares, including the inimitable Howdy Doody Bee-Nee kit.

conversions mentioned above. This is a shrewd move. Consider that consumers might prefer to wait a while before investing in another system—but what's to prevent them from buying one or two compatible cartridges?

With all of this in mind, I drove up to Hartford recently. Hartford is about equidistant between New York and Boston, nestled in the modest foothills of what becomes the Appalachians farther north. It is the home of Coleco's executive offices, which are bursting at the seams with employees. The company is growing quickly and will be moving to a larger headquarters in October. Meanwhile, I am barely able to scout a parking spot in the company's overcrowded lot.

Arnold Greenberg is waiting for me. He is one half of the brother tandem that has steered Coleco's passage from relative obscurity to a diversified corporation and a member of the New York and American Stock Exchanges. A lawyer by trade, Greenberg joined Coleco in 1966 after having not worked for the company since he and his brother ran a delivery route before World War II. Leonard, on the other hand, stuck it out. In fact, it was he who was responsible for Connecticut Leather's move into hobbycraft in the '40s and swimming pools in the '50s.

Leonard is the engineer, Arnold the lawyer—a combination that could make any business go . . . and any mother proud. And what about Dad?

"A man of his generation," says Arnold. We are sitting in a conference room that is decorated with a variety of plaques, photographs and laminated magazine articles. A portrait of Maurice Greenberg, who died two years ago, hangs over the TV set across the room. "He was born in Russia, had a limited education in the formal sense, but was determined to succeed. A rugged individualist. These are important qualities, particularly if you founded a business in the depths of the Depression."

By the end of World War II, Leonard had talked his father into risking a new venture: leathercrafts. At first, Coleco only sold spools of leather lacing for stitching purposes. But, in 1954, the company's Official Chief & Princess Moccasin kit was awarded at the New York Toy Fair, and this set off a rash of similar items: Mickey Mouse and Davey Crockett Moccasin kits, Chief & Princess Handbags and, best of all, the Official Howdy Doody *Bee-Nee* kit (my emphasis).

Then, in 1957, Coleco discovered plastic. Arnold explains: "Toward the end of the '50s, Leonard developed the use of plastic to manufacture small wading pools. Many people first know Coleco by the little plastic pools they

buy for their toddlers. More people probably know us for above-ground pools, which we went very big into in the '60s. By the late '60s, we decided we should do something for the fall of the year, too."

In 1968, Coleco acquired Eagle Toys of Canada, which was re-christened Coleco Canada. A tabletop design called rod-hockey—probably the most realistic sports board game ever designed—was their game. "A marvelous game," Greenberg waxes enthusiastic. "Rod-hockey taught hand-eye coordination before there was a video tube around."

It was rod-hockey that introduced Coleco to the world of sports games—or, as Greenberg says, "Took us into the arcades." Starting in the early '70s, Coleco began using arcades as their "primary research laboratory. We'd go there and look at the trends. Then we'd go back and develop low-cost home versions (such as Air Hockey and pinball). One day we saw something electronic that was twitching named Pong. We said, 'That's a clever idea—if we could do that for the home and sell it for about $50 retail, we would have a bonanza.' The next year (1976), we brought out an updated version of Atari's home Pong for $49.95."

Coleco's Pong, or Telstar as it was branded, *was* worth a bonanza, indeed. But, like most fads, the thrill was brief and illusory. When the dust cleared in 1978—by this time, Coleco had added several upgraded Telstars, including a programmable "arcade"—the company found itself in the red some $27 million. Greenberg doesn't even flinch when he concedes: "We had quite a significant loss in '78 incurred in connection with the liquidation of excess dedicated video inventory."

Adds Greenberg: "It was the hand-helds and *not* programmable video that quickly spelled the death knell for dedicated video. There was not great interest in programmables to begin with. Fairchild (Camera & Instrument) and RCA gave up the ghost. The whole world at that time was more interested in hand-helds. So, we chose to pursue the hand-helds instead."

So, while Coleco tackled the hand-held market with its series of "Head-to-Head" electronic sports games, Atari began camping out with its VCS on the goal line. In effect, Atari stole the programmable show when Coleco had a fighting chance to do something about it. How does this make Greenberg feel? *(Continued on page 76)*

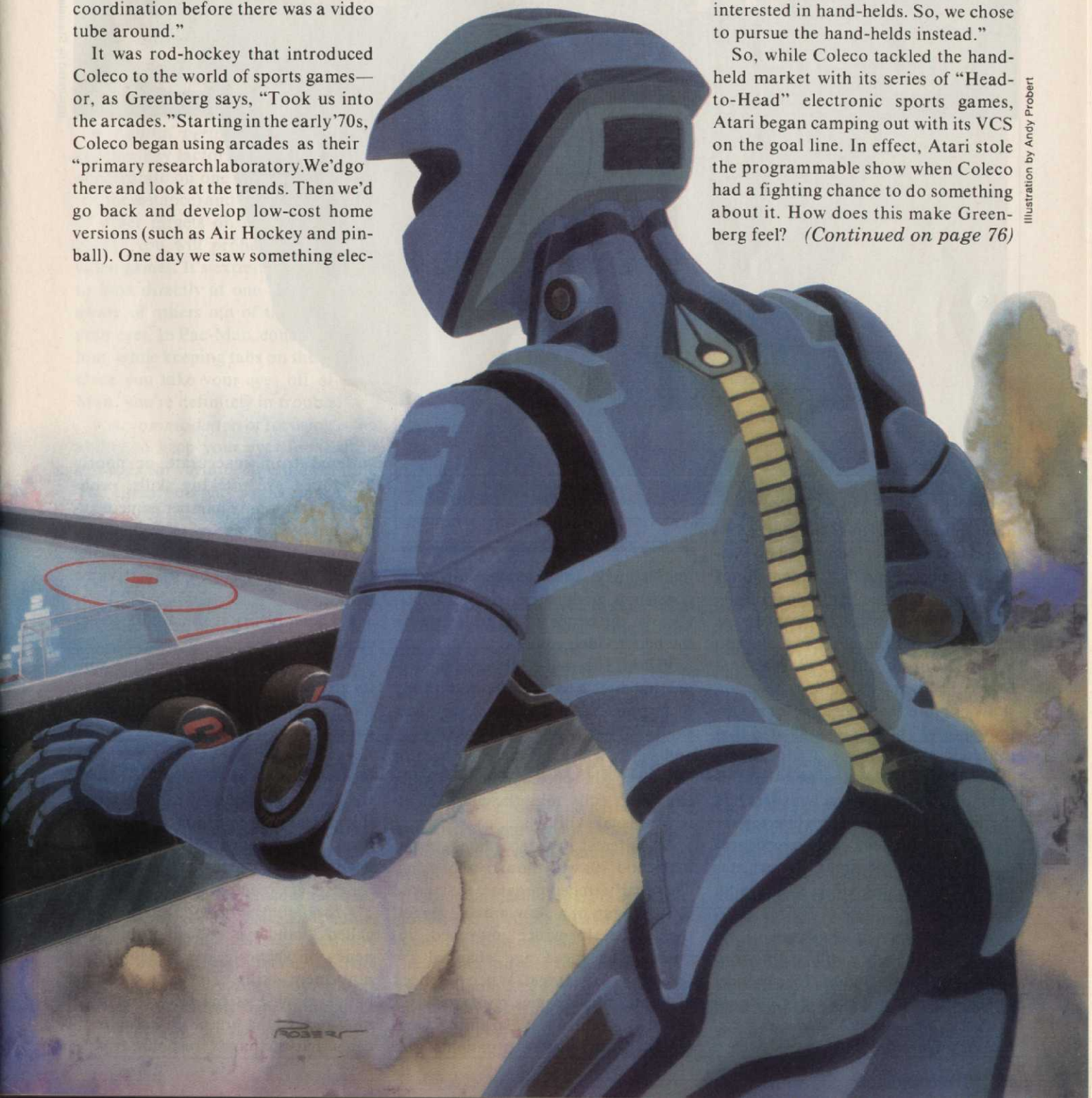
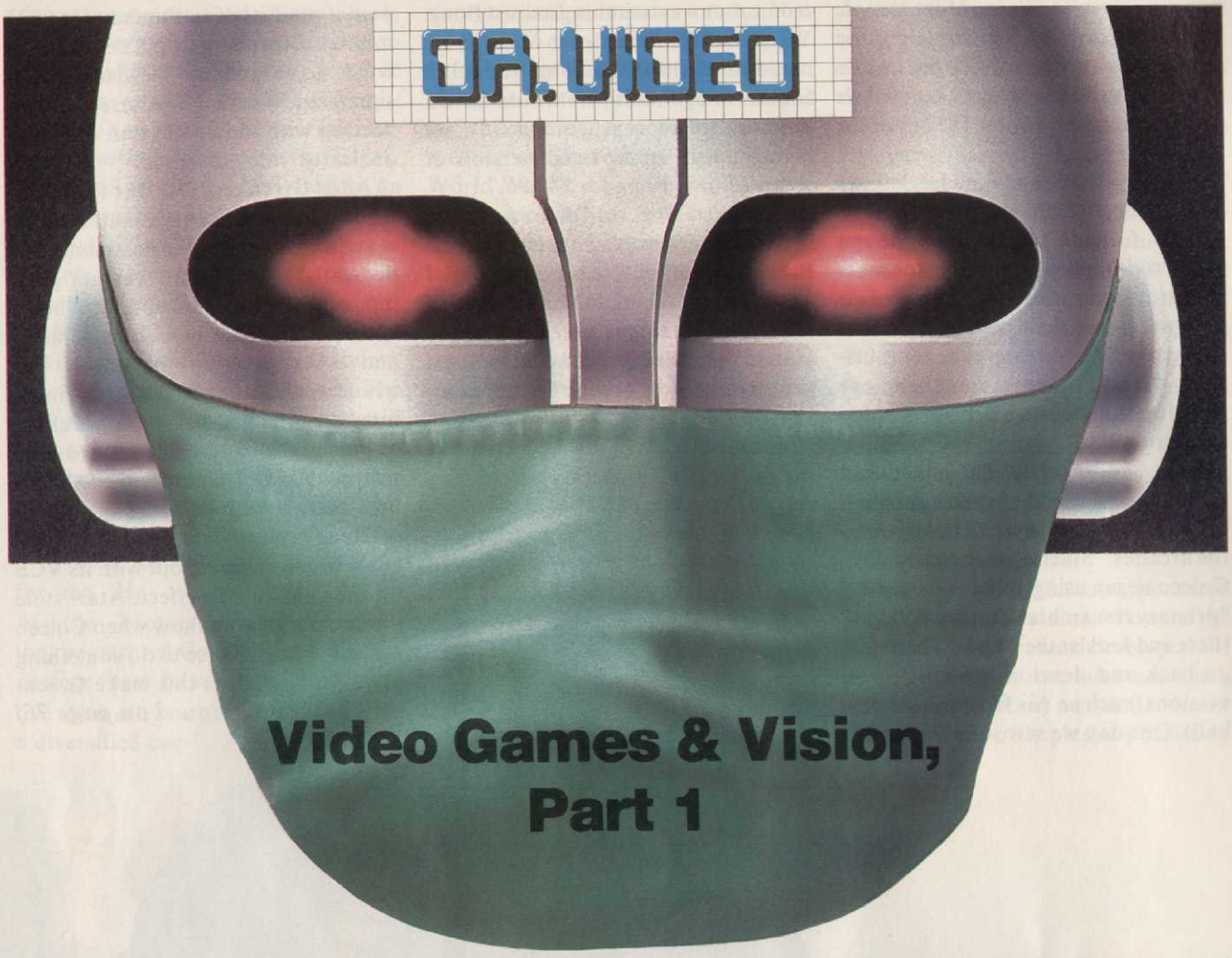


Illustration by Andy Probert



Illustrated by Stanislaw Fernandes

Video Games & Vision, Part 1

By Dr. Arnold Sherman

Keep your eyes on the Pac-Man," shouts a coach during a video game tourney. This may sound ludicrous, but the command makes sense. Doing well on Pac-Man or any other video game requires an extremely high level of visual ability.

As an optometric consultant to the U.S. Olympic Committee in Colorado Springs during the 1979 National Sports Festival, I examined the vision skills of more than 599 athletes in various sports. The results indicated that athletes may choose their sports depending on their visual abilities. For example, swimmers and wrestlers had the lowest vision scores while tennis, Ping-Pong and hockey players recorded the highest. At night, the athletes relaxed by playing video games and, interestingly, their game skills were consistent with their vision scores. Clearly, the better visual athletes were the better video gamers.

Vision, I should explain, is the signal that directs the muscles of the body to respond. Vision answers the questions, "What is it? . . . where is it . . . and when will it be there?" Superior size, strength, speed and innate ability can never fully take the place of inferior visual skills.

My interest in video games started in the mid '70s with the arrival of Pong. These early archetype games first tested eye-tracking of a slow moving target, then as performance improved, increased the speed and changed the direction of the target. When practiced at home, those games reinforced our office program of visual training. Generally, we worked with patients who suffered from inaccurate or poorly developed eye tracking skills, problems that not only hamper game playing, but reading ability as well.

Nine different visual skills are being tested every time you play a video game:

- *Visual acuity* is the ability to see clearly.
- *Dynamic visual acuity* is the ability to see clearly while a target is in motion—as is the case in all video games.
- *Ocular-motor ability* basically means eye movement skills. It involves tracking a continuously moving target (like a Galaxian) or looking from one target to another without moving your head. This is particularly important for efficient reading.
- *Eye-hand coordination,* commonly called "hand-eye coordination," depends on accurate and sustained eye movement skills. The eyes lead the hands as well as the body and send messages to the brain. Research indicates that the hands' response time is

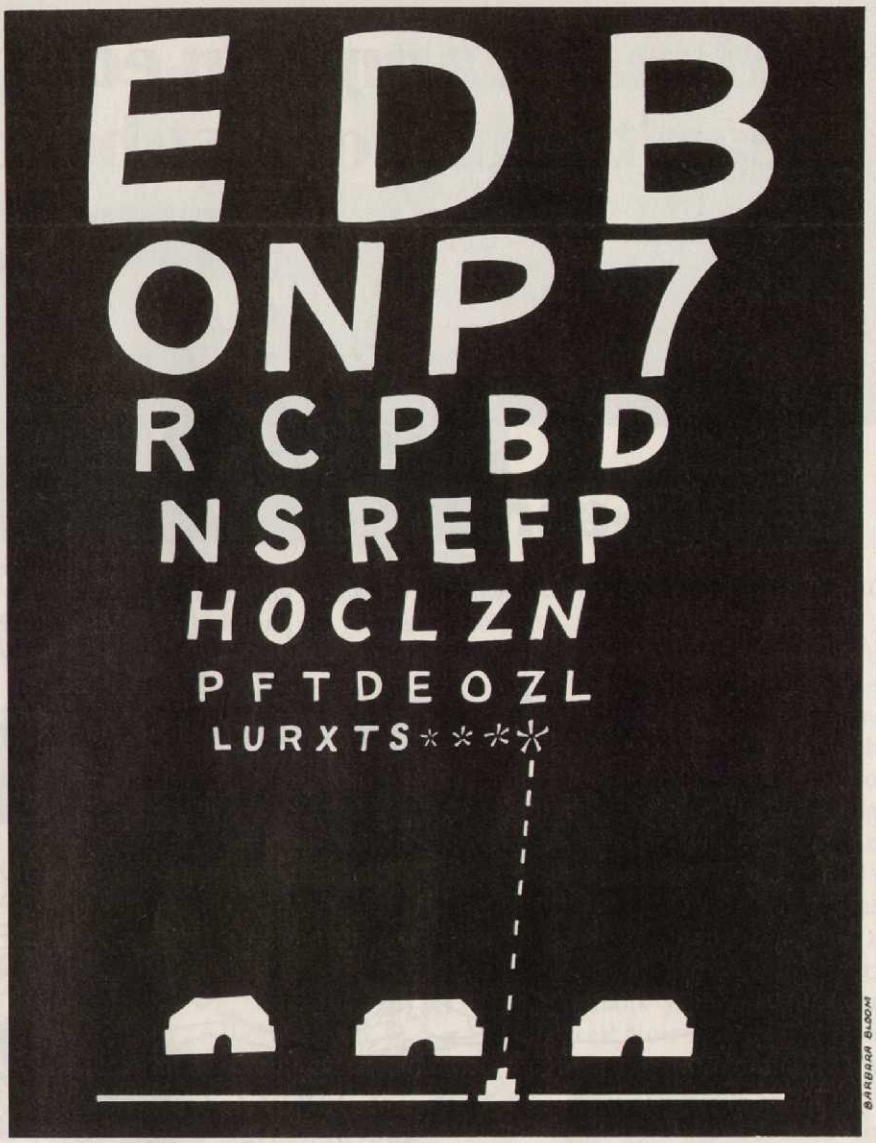
Arnold Sherman is chairman of the Sports Vision section of the American Optometric Association. He practices optometry in Merrick, NY. Karen Dorman, also an optometrist, assisted him in researching this article.

the same with both skilled and unskilled players.

- *Visual reaction time* is the skill required to hit a baseball or make a save in hockey. Essentially, it is the ability to make an appropriate change of movement very quickly.
- *Visual adjustability* is related to visual reaction time. It's the ability to make quick refinements and changes of movement utilizing eye-hand coordination.
- *Visualization* means memorization. Any pattern person can tell you how important this skill is in video gaming. Since the games are computer programs, one strategy is to watch certain sequences repeatedly until they have been visualized.
- *Central peripheral awareness* is another key factor. If you are able to concentrate on one target (in the center, for instance) and still remain aware of other targets on the screen (periphery) you will probably do well at video games. It's extremely important to look directly at one target and be aware of others out of the corners of your eyes. In Pac-Man, concentrate on him, while keeping tabs on the ghosts. Once you take your eyes off of Pac-Man, you're definitely in trouble.
- *Accommodation* or focusing is the ability to keep your eyes focused on one area for sustained periods of time The closer you play to the screen, the more focusing is necessary. When playing for prolonged periods of time, you may suffer a focus spasm. Take a rest, look at different places around the room or, better yet, peer out the window for a few minutes. This will allow your focusing muscles to relax.

One visual skill that has no bearing on video gaming is binocular stereopsis, which is the ability to appreciate depth perception by using both eyes together as a team. Even in games that feature three-dimensional simulations, this skill is not required.

There is no question that people with highly developed visual skills are more equipped to master video games. Baseball players, shooters in basketball and even very efficient readers are all likely to be better video gamers than the average player. In the second part of "Video Games & Vision," I will provide further evidence regarding these last statements. ▲



Blow away the first five rows, then begin the 20/20 challenge round.

VideoAskDoctorVideoAskDoctorVideoAskDoctorVideoAsk

If I wear glasses occasionally, should I wear them while playing video games?

If your wear glasses only for distance, you would probably do better with them off in an arcade. Or wear your reading glasses, instead. At home, I advise wearing glasses since you should be about eight feet away from the TV during play. But if your glasses are only for reading, they shouldn't be on. Generally, glasses improve your visual acuity, dynamic visual acuity and also eye movement skills.

Can playing video games hurt my eyes?

Other than suffering from eye strain, no. Focusing your eyes at any one distance for long periods of time causes the aiming muscles to cramp up. For every 30 minutes of playing, rest five minutes by focusing far away, preferably at the sky.

Can video games help my eyes?

Most definitely. Video games hasten the development of numerous visual skills that are useful in the classroom and on the athletic field. Since all of these skills are learned, they can be improved upon with practice. In fact, if you are having difficulty performing well on video games, this may actually be a symptom of a visual problem that should be examined by an optometrist.

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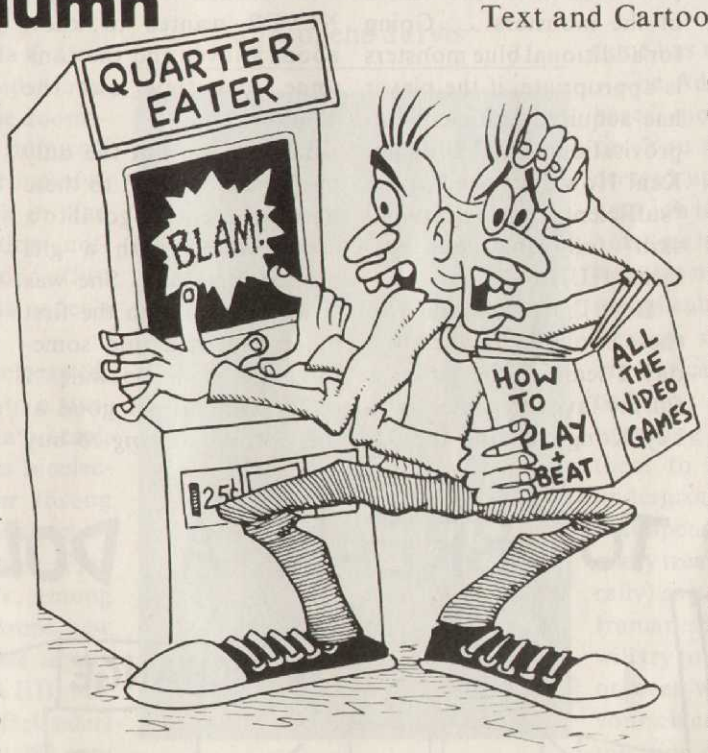
BOOK BEAT

The Official I-Hate-Video-Games-Books Column

Text and Cartoons by John Holmstrom



These beat-the-games books are a waste of time and trees. Yeah, they're selling like hotcakes, and they do improve some players' scores, but I think they're boring and even dangerous, and I'll tell you why.

People believe that the act of buying a how-to book magically gives them powers they've never had. Look at diet books. There are hundreds of 250 lb. blimps out there who own shelves of diet books. They can't lose weight themselves, but they can sure tell you *how-to.*

To fat people, I offer four words that would solve all their problems: *Don't eat so much.* And to the novice video gamers, my advice is just as simple: *Spend lots of quarters.* These four words are ALL you need to know about beating the games and upping your scores. If I wrote a book about video games, I'd give people tips on how to break a dollar, how to get a quarter for two dimes and a nickel and how to borrow money when you run out of spare change. That's ALL!

Most video books start out by explaining that players must spend a lot of TIME learning the machine before they achieve a high score. Tell me you need a book to figure that out. You want to know what else I hate about them? They promote the idea that video games are no more than challenges to be WON! MASTERED!! BEATEN!!! Well, I'd like to BEAT, SMASH and DESTROY every one of these books. Who wants to play Pac-Man for two hours, anyway? That's not fun, that's work. To me, these books are nothing but HOMEWORK!

I'm sure there's someone out there whose Pac-Man score doubled after reading a book. You're probably saying to yourself, "Boy, what a jerk this guy is." Well, hear me out first, OK?

The cover of Michael Blancet's *How to Beat the Video Games* is typical. It says, "This complete book of strategy reveals everything you need to know to boost and improve your score and *beat* (their emphasis) the video games." Then it lists practically every game you'd find in an average arcade six months ago.

The book says Mike's "a legend in video game circles," so let's list some of his expert tips on Galaxian—one of my favorite games. After telling you how the game works—something you could figure out by watching someone else play once or twice—all he has to say is that "there's no trick or safe spot in Galaxian, just a lot of defensive maneuvering." Thank you, Michael Blancet! Now I know everything I need to know to go out and beat Galaxian!

Hey, alright, let's not single him out. Even though *SCORE: Beating the Top Sixteen Video Games* by hot-shot Ken Uston is probably the most informative and detailed of the whole motley bunch, it still has its faults. Again, the book tells me virtually nothing about Galaxian. "It's critical not to waste shots." (I paid $2.50 for someone to tell me that?) "Adjust your tempo to the movement of the formation. The tempo should come after a few games." (Ha! I've got news for you, Ken.) "With only one blue alien remaining, you can sometimes navigate the ship to the far left of the screen in such a way that the alien and its missiles will miss you continually." (Thanks for the advice, but I

learned that the second time I played Galaxian.)

And let's not forget Tom Hirschfeld, the first writer who insisted we learn *How to Master the Video Games.* (This is where I get all confused—now am I supposed to MASTER or BEAT the games?) Some of his more incisive Galaxian tips include: "The scenic background is deceptive ... Whenever a new screen starts, a flag appears at the bottom right ... Shoot as often as possible." But Ken just said ... oh, never mind.

Obviously, there are a lot of fast-buck artists knocking out these books. Instead of promoting creative problem-solving or stressing methods to improve concentration and memory skills, what do we get? Pac-Man patterns. Those are the dumbest things I've ever seen. They're useless. Aside from the fact that the manufacturers change patterns BECAUSE of the books, or that once you blow your pattern you're screwed, you DON'T NEED PATTERNS to BEAT Pac-Man. The best players know the monsters well enough to avoid them forever and WIN just fine, so they can sell their patterns somewhere else.

Still don't believe me? Then, take Ken Uston's *Mastering Pac-Man* ... please. The original Pac-pattern man provides page after page of detailed diagrams and pearls of wisdom like "During patterns P1 and P2 particularly, slight timing variations can lead to variations in the movement of the monsters ... Going for additional blue monsters is appropriate, if the player has acquired sufficient improvisational skill." Brilliant, Ken! How does one acquire "sufficient improvisational skill" following your patterns, HUH?

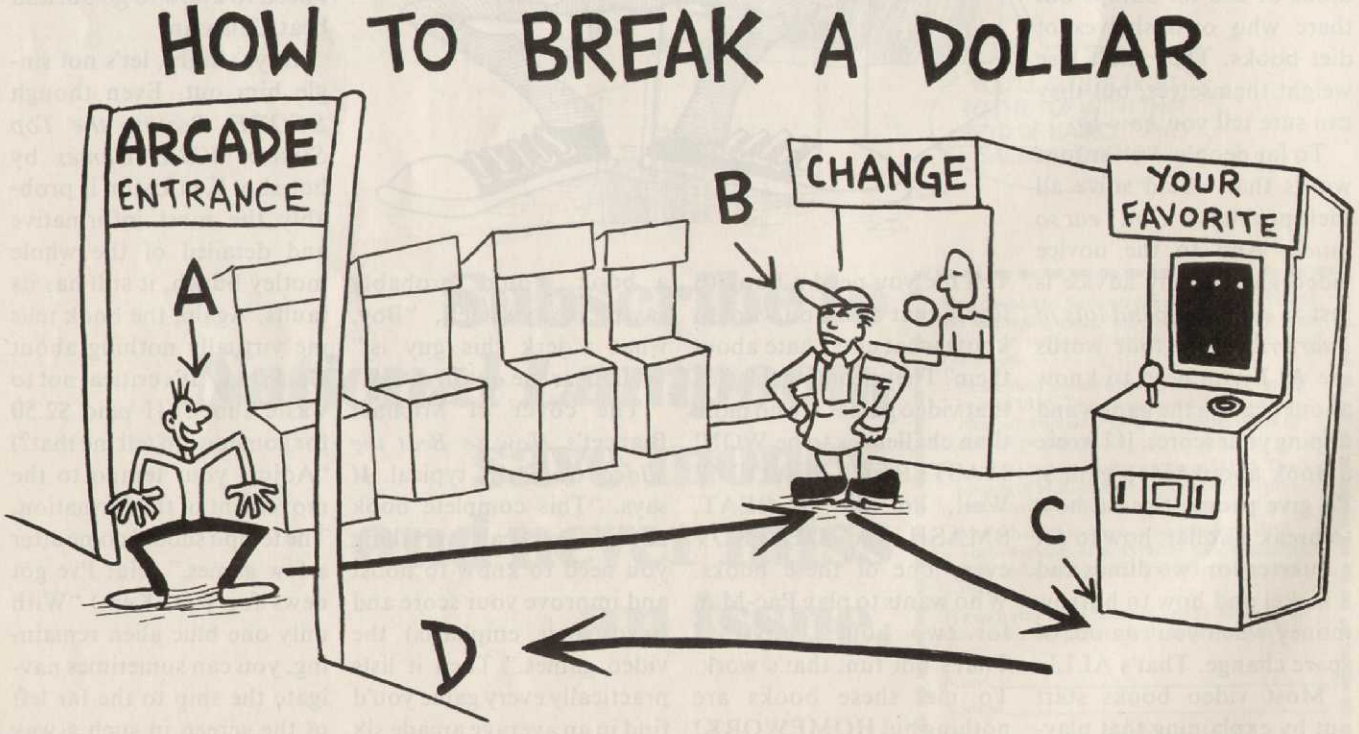
Hey, I'm not immune to these books. Why, the other day I learned the patterns for my favorite game, Donkey Kong, reading the 32-page pamphlet *How to Win at Donkey Kong.* That may be the biggest mistake I've ever made in my life. Where once I felt a surge of ADVENTURE and EXCITEMENT every time I walked up to a Donkey Kong machine, now I'm SLUGGISH and BORED. Mechanically, I plod through the predictable patterns the book has laid out for me so I can WIN, but the thrill is gone. What's even worse, now I know what all the game's mysterious symbols and characters signify. I feel like I've learned everything I NEVER wanted to know about a lover and the romance just flew out the window.

I know I'm not the only one who's opposed to these books. Recently I got into a conversation with a girl playing Pac-Man. She was struggling through the first maze and then said something that made me smile. "I really want to get good at this without *having to* buy one of those books." You mean, she felt PRESSURE to buy a pattern book? "Oh yeah, everybody's reading them," she explained.

Of course, to a fanatic like myself, these books are already OBSOLETE! WASHED UP! FINITO! PAC-MAN? Last year's game. DONKEY KONG? It's getting old, too. DEFENDER? Yawn. If I *am* going to read them, then I want tips on DIG DUG! JACK THE GIANT-KILLER! HYPERBALL! ROBOTRON! THIEF! FRENZY! Even CAVEMAN!

BUT THE WORST, MOST OFFENSIVE, STUPIDEST THING ABOUT THESE LOUSY BOOKS IS THAT THEY'RE TERRIBLY WRITTEN! BAD GRAMMAR! LOUSY SENTENCE STRUCTURE!! BORING DESCRIPTIONS!!!

Some jerk you pull out of an arcade isn't going to be Shakespeare, y'know. ▲



A. Start Here. B. Find man in apron or at change booth. Give him one dollar bill. Count four quarters. C. Insert one quarter for each game. Repeat as necessary. D. Leave when you're finished playing.

COIN-OP SHOP

Picks & Pans for an Otherwise Dull Season

By Eugene Jarvis

Is there life after Pac-Man? Certainly not if the gloom and doom-sayers have their way. The doomsday folks see the video game riding off into the sunset, joining the urban cowboy, disco and the pet rock in "fad heaven." Conventional wisdom notwithstanding, I recently headed off to my local arcade to witness video's funeral.

Shouldering past the slack-jawed, glassy-eyed masses, I come to a startling conclusion: This is not a funeral, but some kind of space-age bioelectronic séance. Many of the throng stand mesmerized before the altars of last year's favorites—Asteroids, Pac-Man, Defender and Berzerk, among others. But there are also some new faces in the crowd with close family ties—Space Duel (Asteroids III), Ms. Pac-Man, Stargate (deluxe Defender) and Frenzy (deluxe Berzerk). '82 may well go down in history as the year of the "deluxe." The arcade scene has been beset by more spin-offs, rip-offs, retreads, and cross-pollinations than you can shake a joystick at. "Is there some kind of corporate conspiracy against originality or could there be some socially redeeming value to this clone onslaught?" I mutter en route to the change machine.

No sooner do I set out to investigate this burning question than two illegitimate offspring of the granddaddy-of-

TAKE YOUR MARK: Despite this wonderful graphic, the author's quarter does not go to Taito's Grand Champion.

damn-near-everything (Pac-Man, of course) catch my eye. **Dig-Dug** by Atari and Midway's **The Adventures of Robby Roto** seem to be part of a growing underground movement in video. Both feature Pac-Man-like buggers who have abandoned the surface diet of blips, energizer cookies and an occasional fruit snack for the heartier subterranean fare of good old mother earth (ychhh!!), the usual four-way joystick to control player movement, and one additional special purpose button ("magic" on Roto and "pump" on Dig-Dug). The digging game has arrived.

The Adventures of Robby Roto is based upon the classic hostage scenario. You control Robby (a Pac-Man dressed up in a coal miner's hat) and your job is to rescue a motley group of hostages held in an underground maze by some nasty spiders (Iranians?) who inexplicably have the power to walk through solid rock. As you descend into the catacomb, you must avoid the bad guys and release the hostages by tunneling to them and then leading them to the surface. While you're underground, be sure to get the key that opens the maze exit and snatch as many treasures (for extra points, naturally) as you safely can. Of course, the Iranian spiders are mean muthas and will try to recapture liberated hostages or, even worse, do you in. If you find yourself cornered, try the "magic" button (one per maze, but you can store them up)—it momentarily stuns the bad guys, allowing a quick getaway.

Roto has a few nifty special effects, but there's nothing here that's even marginally awe-inspiring. The graphics are cute, but unspectacular. (You've seen this stuff before on Gorf and Wizard of Wor.) Roto is easy-does-it video fun. Nothing fancy, nothing heavy. Perhaps the first generic video? Certainly not the last.

Back to Dig-Dug. Rather than playing the good-guy hostage rescuer, in Dig-Dug you're cast as the heavy—a wanton sadist bent on destroying a race of underground weevils by mercilessly pumping them up until they pop. As if this isn't enough to satisfy the

Eugene Jarvis is the creator of such veritable videos as Defender, Stargate and now Robotron. A self-confessed videot, he lunged at the opportunity to review games for this magazine.

S&M crowd, some deft digging enables you to clunk a hapless foe with a large boulder. CRUNCHHH!

Basically, you dig your own free-form underground maze while keeping an eye out for rocks and especially the weevils. They don't like you and you don't like them. (Why? Who knows why?) Like the Iranians in Roto, some of these guys have the amazing ability to walk through solid granite and, as in all Pac-Man spin-off games, you're a goner when an enemy touches you. So, then, you have to decide how to do away with your fellow underground citizen. Well, that's when you reach for the "pump" button and this is when the Freudian action begins. Pressing "pump" launches a mini-phallus in your direction of travel. If a weevil is within range, the phallus attaches to it and inflates the bugger till it explodes. Since you are immobilized during this procedure, never pump a weevil when another is in your area. If you are threatened, release the button to escape.

Dig-Dug is conceptually simpler than Roto, which, translated, means it will have broader initial appeal. However, since Dig-Dug is without much complexity, it risks putting more advanced players to sleep. Is Dig-Dug

Dr. J's Rules of the Robotron Jungle

By the year 2084, man has created a race of "perfect" robots called the robotrons. The robots, constantly improving their own efficiency and intelligence, no longer need the humans to perform work. In fact, they have no choice but to terminate the humans' existence.

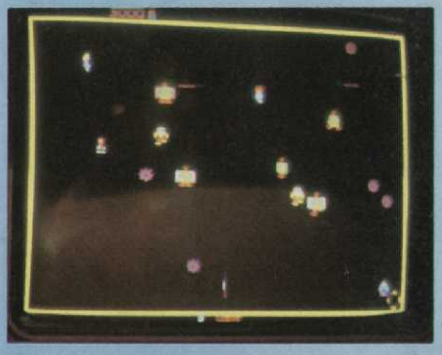
Enter *you*, the last hope of mankind. Beaming down into a 21st century coliseum, your left hand controls an eight-way directional joystick, your right an omnidirectional laser machine gun which you use to vaporize the menacing Robotrons. The action is intense, and can be intimidating to even an experienced player, especially in the late rounds when you find yourself opposed by as many as 100 Robotrons in an arena with no exits. Only by mastering the basic skills of movement and firing and a few simple elements of strategy will you be able to dispose of the various robot characters, rescue the Last Human Family (Mommy, Daddy and Brother Mikey) for bonus points, and warp to the next wave.

Learn the controls

Unlike all other video games, you don't have to shoot in the direction you're traveling. If the robots get you on the run, fire continuously at them while retreating in the opposite direction. It's something like learning to walk and chew gum at the same time. Since your movement and firing are totally independent, you'll soon feel an incredible rush of freedom and power.

Never stay in the middle of the screen

Always blast a path through the Grunt robots—who are programmed to converge upon you if you stay in the center—and move to the outside. Once you accomplish this, go save (walk into or "hug") your family members. This is the big scoring payoff (1000 for the first, 2000 for the second and so on). Before you end the current wave by shooting the last robot, make sure to rescue your entire family—otherwise, they'll be left behind.



Learn the characteristic strengths and weaknesses of each type of Robotron

- *Grunt.* The most basic Robotron, Grunts attempt to surround and overwhelm you. Weakness: They always seek you in a straight line so are easily ambushed.
- *Electrode.* This stationary electrified obstacle is fatal if collided with. Pick them off with your laser.
- *Hulk.* Indestructable, they crush the last Family on contact. If they trap you in a corner, fend them off with your laser. Weakness: The Hulks are exceedingly stupid.
- *Spheroid.* These pulsating red circles produce Enforcer Embryos. Destroy them before the Enforcers get you. Weakness: Spheroids often get stuck in corners where they're sitting ducks.
- *Enforcer.* Meanest of all the robots, they shoot deadly curving sparks at you. The sparks slide down the walls, so stay off the walls and avoid the corners. Weakness: The closer you are to an Enforcer, the slower the sparks become. Take advantage of this by blasting them up close.
- *Brain.* The most intelligent of all, they appear every fifth wave to reprogram the surviving humans into sinister Progs. When threatened, the Brains send out tricky cruise missiles which seek out and destroy the player. Strategy: Rescue as many humans as possible while at the same time concentrating your laser fire on Brain populations. The missiles can also be had with your laser, but are difficult to hit. Try firing back as you run away from them.
- *Quark and Tank.* Similar to the Spheroids, the pulsating square quarks give birth to Tank Embryos. Again, destroy the Quarks before they produce their deadly offspring. Beware of the rebounding shells the Tanks fire—some are deliberately aimed to hit you on the first rebound. Strategy: Avoid or shoot the shells as you blast the remaining Tanks. Watch out for rebounds.

By mastering the basics and acquainting yourself with these enemy profiles, you'll quickly instill fear in the mechanical brains of the robotrons. Good luck on your voyage into the 21st century. May the most efficient win.

a dog? Not likely. It's a no-nonsense game—another strong candidate for generic video of the year. Could you wake me up when I'm done?

Continuing to make my way through the manic hordes, I spot yet another digging game (The Pit by Centuri), but my appetite for excavating has worn

ZAX ATTACK: "This phase is so disorienting, and the enemy craft are so stupid, that it's never over too soon."

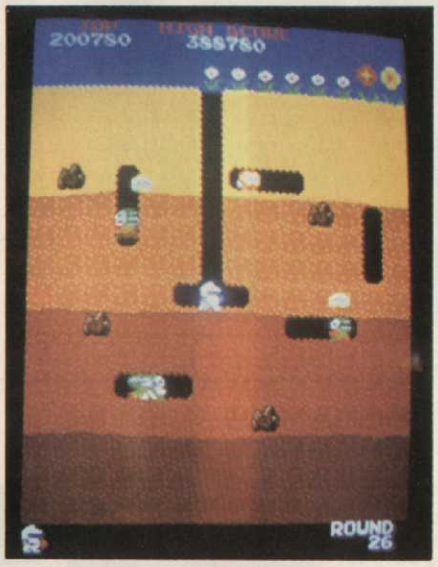
off. I press on. After suffering temporary deafness from the roar of two sit-down driving machines parked side by side—Sega's **Turbo** and **Grand Champion** by Taito—I decide to go for a ride. Turbo first.

I climb into the cockpit, rev my engine, shift to low and take-off on an unparalleled three-dimensional video-driving experience. Although the graphics are a little jumpy and disappointingly lo-res (as in resolution for all you videophytes), the realism is there. As I'm weaving through the pack (using the all-too-familiar back and forth steering motion), suddenly an ambulance passes me by. Here I am, traveling at what seems like half the speed of light, and an ambulance outpaces *me*? Right.

Turbo does have a few neat features, like kamikazee "smart" cars that love to crash into you and a nice variable-speed gas pedal, but you would think that after going to all the trouble to give us 3-D graphics the least they could have done was spend an hour thinking up some new rules. But, all in all, the game's exhilarating. And it certainly beats payments on a 928.

Next, I slide over into Grand Champion. Like on Turbo, the controls are familiar: steering wheel, gas pedal, and left-handed lo-hi shifter. I switch on the ignition and find myself on the starting grid behind about 30 cars. This videot waves a flag, says "go" in a raspy synthetic voice, and then the obviously rigged start sequence—the other guys all get a head start—takes off. Not just a rehash of last years driving game (i.e. Monaco), Grand Champion puts you in a real race: The goal is to pass up the other cars and finish in the top six, which qualifies you for the next heat. You drive until you finish out of the money.

Grand Champion's features include a nifty scanner in the upper right section of the screen that tells you where you are in the race (your numerical ranking is also displayed prominently so you always know where you stand); an exciting foul weather sequence where you must dodge lightning bolts; and a psuedo 3-D tunnel episode. The main attraction for me, however, is to watch the opposing cars occasionally collide and explode with one another—which also happens to be an easy way to improve your ranking. It's hardly as much fun when you crack-up, though. To get back on the track, you're first required to steer into the pits and then

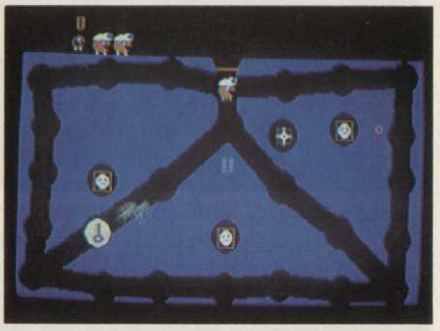


DIGGING DOWN: Even though it risks putting more advanced players to sleep, Dig Dug is not a dog.

wait for what seems forever while some cutesy mechanic walks over and tells you to "hurry up." Pardon me, sir, but that's exactly what I had in mind. After an inspection, you're finally allowed to return to the race.

I finish in eighth place. Even though it's "game-over" for me, my driving adrenalin is just starting to flow. What's a frustrated dragster to do? Drive a real race with uninspired graphics (Grand Champion) or opt for a saccharin speedway with racy 3-D scenery? My quarter goes into Turbo.

Moving along, I discover a crowd staring at Turbo's cousin, **Zaxxon.** It's another of Sega's clever pseudo-3-D designs. Imagine piloting a starship over a space fortress that is a cross between a medieval castle, a refinery,



IRANIAN ALERT: Robby Roto's spiders are out to get you. Use your "magic" & run.

an aircraft carrier and "The Enterprise." Now, at first, this cosmic battleship seems impenetrable due to its high brick walls, which you can't for the life of you figure out how to negotiate. Watching the altimeter gauge and the ship's shadow helps, but be prepared for a lot of rough landings into walls. (Yes, Virginia, there are bricks in space!)

Zaxxon's gameplay is identical to the now-classic "wallpaper" video genre (Scramble was one of the first). The basic idea is quite simple: As the "wallpaper" scenery scrolls by, shoot anything that moves and avoid everything else. There are no hostages to rescue, no planet to defend, just good old-fashioned kill, kill, kill. In Zaxxon, learning the joystick can be trying (remember up is down and vice versa), but after you earn your wings, few things in life are as pleasurable as sweeping in low for a strafing run on the oil tanks and missile silos. Conversely, few things in life are as irksome as having to battle the hostile, but apparently mindless star fleet that follows the first fortress encounter. This phase is so disorienting, and the enemy craft are so stupid,that it's never over too soon.

For the second pass over the fortress, the action is more intense. Elec-

(Continued on page 75)

HARD SELL

The $300 Question: Astrocade or Intellivision?

By Roger Dionne

Everyone reading these pages has surely heard of Intellivision, but only a few, no doubt, know about Astrocade. This is particularly odd since Intellivision is a relative baby in the programmable TV-game arena, while Astrocade's roots trace back to 1977, the same year Atari's Video Computer System (VCS) was introduced.

Astrocade, which was originally named Bally Professional Arcade (owned by Bally Manufacturing), never took off like the less expensive VCS did. After losing $10 million on the system in 1978-79, Bally sold it to a small Columbus, Ohio company called Astrovision. (Only recently, the name of both the system and the company was shortened to Astrocade.) Meanwhile, in 1980, Mattel, whose most famous product until that point had been the Barbie doll, released Intellivision.

Today, Astrocade and Intellivision might be considered the Lincoln and Cadillac of TV-game systems. With Astrocade retailing for $299.95 and Intellivision for between $250 and $300, they are the most expensive consoles currently on the market. The quality of each system's graphics and controls games, is, in general, of the first order. What follows is a comparison of the two.

Hardware

The Astrocade master component is a neat, squared-off structure with a plexiglass storage compartment, a 24-key keypad and a slot in front for inserting the cartridges (which resemble cassettes). The Intellivision console is sleeker and more handsome with nothing interrupting its modern lines except a power button and reset button; cartridges (which resemble cartridges) plug discreetly into the side of the unit, where they cannot be seen.

Four permanent programs are contained within the system's circuitry. Two of them are games (Checkmate and Gunfight), and a third (Scribbling) allows you to doodle on the TV screen, using up to 256 different colors. The fourth program is, essentially, a pocket calculator. More significantly, a separate cartridge called Bally Basic converts Astrocade into a programmable 4K ROM computer, inviting you to create your own games, graphs, music, video art and other programs. But, to real computer enthusiasts, this is child's play—instead, just attach Zgrass module with a full keyboard to the console and suddenly Astrocade becomes a sophisticated 32K ROM home computer. The conversion price, however, is not cheap: the Zgrass retails for $599.

For some time now, Mattel has been promising two peripherals for the Intellivision system. One is a keyboard computer (also, $599), which is currently available only in a few test markets. The second is Intellivoice, a voice synthesis module that plugs into the cartridge outlet of the main unit. For $59, Intellivoice will serve as a sort of partner for the player as he makes his way through the intricacies of specially designed cartridges (B-17 Bom-

ASTROCADE'S ASTROCADE was born in 1977 and raised by Bally, its original parent. At $299, it is the most expensive TV-game system on the market.

ber, Space Spartans and Bomb Squad). While concentrating on the action, Intellivoice broadcasts information about such matters as your ship's energy level and shield damage, as well as the location of attackers.

Both Astrocade and Intellivision have an interrupt mode, which enables you to stop a game in progress and return to the exact point where you left off. The two systems also automatically turn the TV screen blank whenever a game has been left on with no player input for more than five minutes. This feature prevents the possible occurence of phosphor burns on the picture tube.

Controls

Astrocade's controls (as many as four can be connected at once) are the most comfortable, most responsive and easiest to use of any on the market. Shaped like a pistol butt, a trigger replaces the customary action button and a knob at the top of the handle works as both an eight-direction joystick and dial, depending upon the game. In only a few games (Gunfight, Handball and Red Baron) are the joystick and dial functions both utilized. The knob also doubles as a remote control game, bonus and difficulty level selector. No other system makes the routine procedures of setting up a game so convenient.

Intellivision has two permanently attached controls, which fit snugly into the top of the master unit when not in use. By pressing the edge of the disc with your fingertips, you can shift one figure on the screen (such as a basketball player) in any of 16 directions. Theoretically, the direction disc gives you more control than a joystick, but using it with precision takes a good deal of practice. And the action buttons that are found on either side of the control are guaranteed to produce sore thumbs for a long while.

What distinguishes the Intellivision control though, is the 12-key keypad section located just above the disc. A keypad overlay, which accompanies all Intellivision cartridges, acts as the player's guide to the keys' functions for that particular game. For example, in Major League Baseball, nine keys control the nine defensive players on the field. After a ball has been hit, tap a specific player's key to activate him and then use the disc to send him after the ball; press a specific player's key and the ball will be thrown to him. By combining keypad action with the direction disc, you can, among other things, steal and hit-and-run, execute pick-offs, double plays and rundowns—features no other video baseball cartridge comes anywhere near duplicating.

(Above) Astrocade's Solar Conqueror, (below) Intellivision's Space Battle.

With competition heating up, no one is releasing any new game unless the graphics and sounds are as good as the state of the art allows.

Software

Both in terms of audio-visual quality and player control, Intellivision's numerous sports cartridges have come to be the model against which other sports cartridges are measured. Another hallmark of Intellivision games is their complexity. Whereas the tank games made for the VCS and N.A.P.'s Odyssey² are straightforward, one-on-one shoot-'em-ups, Intellivision's Armor Battle involves two tanks per side that recoil and change position when they fire and that must be maneuvered over a variegated battlefield of trees, water, grass, roads and buildings, whose arrangement changes

MATTEL'S INTELLIVISION avec Intellivoice and Space Spartans. Total list price: $390.

each time the game is played.

On the other hand, Astrocade's Panzer Attack is the only tank game where as many as four players can do battle at the same time over a barrier-filled field. But what makes Astrocade's best games appealing is their playability and excellent visual and audio effects. The sound, fury and artful dodging involved in Galactic Invasion, Astrocade's interpretation of Namco's Galaxian, actually produces the feeling of a first-rate arcade game. And, in the fast-action Space Fortress, a hit on your fortress sets off a wildly-colorful explosion that spreads spectacularly over the screen for several seconds; simultaneously, a thunderous roar resonates throughout the room, the house, the neighborhood.

In all, 27 cartridges are—or soon will be—available for Astrocade and 35 for Intellivision. The average cartridge price for both systems is $30.

Astro Battle vs. Space Armada

Characteristics typical of Astrocade and Intellivision games are reflected in their renditions of the classic Space Invaders. Audio and visually, Astrocade's Astro Battle is the better of the two. Brightly colored, crustacean-looking invaders march down the screen to a squishy beat; and, at random intervals, their command ship, a spiffy, red flying saucer, complete with clearly defined portholes, beeps noisily across the top of the playfield. As in Space Invaders, each new army begins closer to your laser base, though unlike in Space Invaders, the game inexplicably ends after the sixth attack (your base is overrun). With four difficulty levels (which are determined by the intensity of the invaders' bombs), the game is challenging and visually exciting, though not significantly different from basic Space Invaders.

In contrast, Intellivision's Space Armada adds numerous twists and complexities to Space Invaders. For instance, damages to your protective shields remain from one wave of invaders to the next and may be repaired only when you hit one of the command ships that zoom across the top of the playfield at breakneck speed. Another departure is the aliens' choice of weapons and guises: During attacks, they drop white corkscrew bombs that can destroy a base only with a direct hit; in the third and fourth, they add yellow corkscrews, which are capable of quashing any base in their vicinity, to the arsenal; fifth and subsequent armadas fluctuate between visibility and invisibility, and the seventh and eighth are equipped with deadly guided missiles that sadistically stalk your base. (By the way, Atari's Space Invaders allows you to choose many of these same variations. Space Armada doesn't give you that choice.)

Whether these innovations make

(Continued on page 80)

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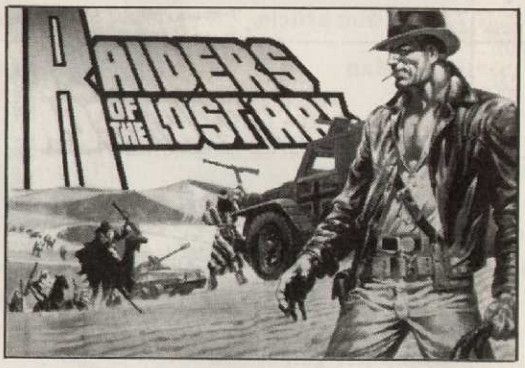
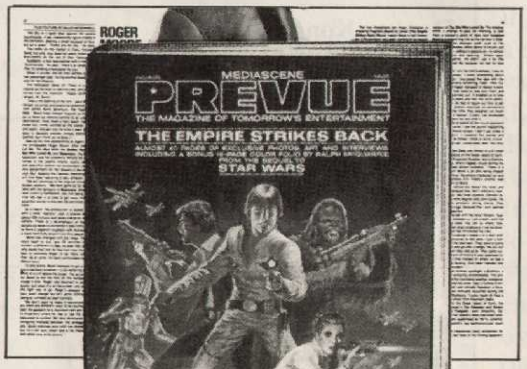
Gamer Feedback #1: Results

	TALLY WINNERS	MOST "UNUSUAL" ANSWERS
1. **Favorite department:**	**Blips** **Coin-Op Shop**	Dr. Audio Norman Bushnell
2. **Favorite feature:**	**Activision article**	Hard Smell
3. **Want to see less of:**	**Pac-Man** **Ads** **Dr. Video**	Nasty brats in the arcade
4. **Like to read most about:**	**New software & systems** **How to beat the games** **Interviews with designers**	How to pick up girls who play video games
5a. **Favorite form of play:**	**Coin-op games-1st** **TV Cartridges-2nd** **Computer games-3rd**	Horseplay
b. **Favorite arcade games:**	**Donkey Kong-1st** **Pac-Man-2nd** **Tempest-3rd**	
c. **Favorite TV cartridge:**	**Pac-Man-1st** **Demon Attack-2nd** **Defenders-3rd** **Yar's Revenge-4th**	
6. **Biggest rip-offs:** a. TV cartridges b. Arcade games	**Pac-Man** **50¢ games**	
7. **Have you finally had enough Pac-Man?**	**Yes (89%)** **No (11%)**	Enough is enough
8. **Views on Pac-Man (Atari version):**	**Disappointing** **Poor maneuverability** **Hard to see** **Not cute**	Yawn! Wake me when it's over. For this we had a National Pac-Man day?
9. **Choose a spokesman for Atari's VCS:**	**Alan Alda (41%)** **George Burns (26%)** **Orson Welles (19%)** **Charo (9%)** **John Houseman (5%)**	Alan Alda - best bet John Houseman - too dull Orson Welles - too fat George Burns - can't relate Charo - 3-D version please
10. **Favorite Video Game Characters:**	**Pac-Man** **Mario** **Ms.Pac-Man**	
11. **Video Games Hit Parade:**	**Pac-Man** **Donkey Kong** **Ms.Pac-Man**	What!?
12. **Ideas/concepts for new games:**	**3-D Games** **Pac-Man Jr. Game**	Game based on shoe repair Game based on hunting in African jungles (drum roll, please): Safari Atari Kill the Fundamentalists Hit the Pedestrian

P.S. Thanks for the terrific response to VIDEO GAMES' first Gamer Feedback. Keep those cards and letters coming.

Note: Atari's home verion of Pac-Man was voted biggest rip-off and favorite TV cartridge.





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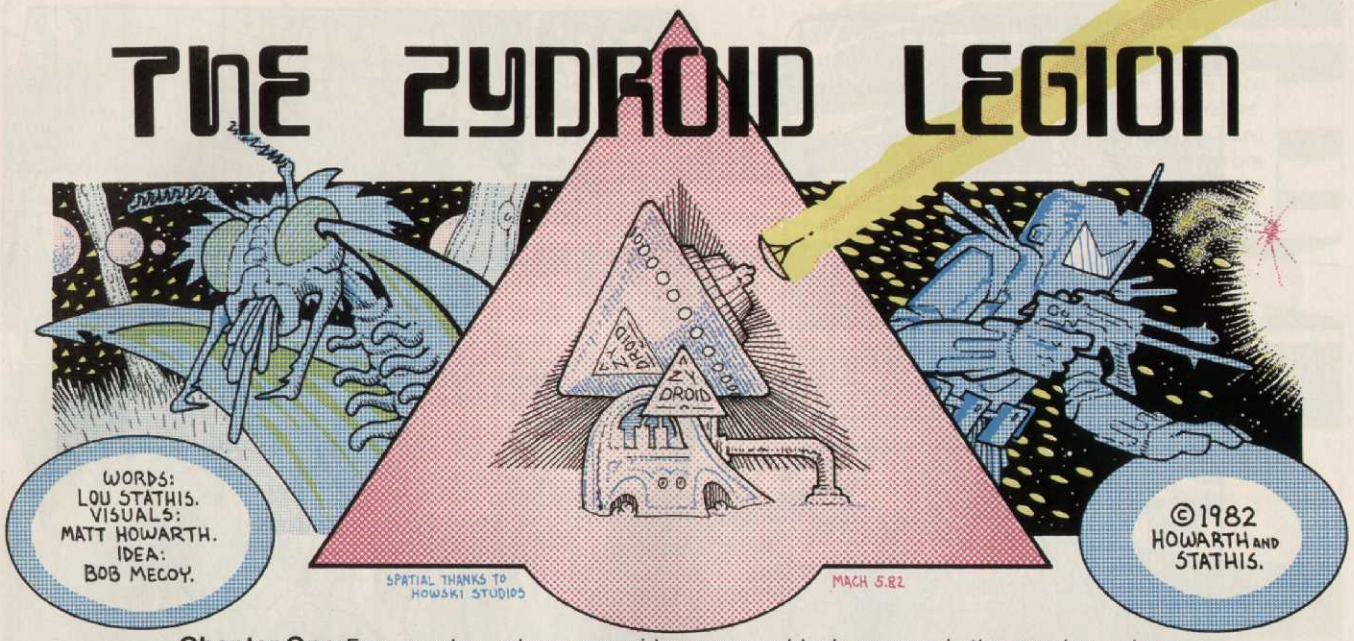
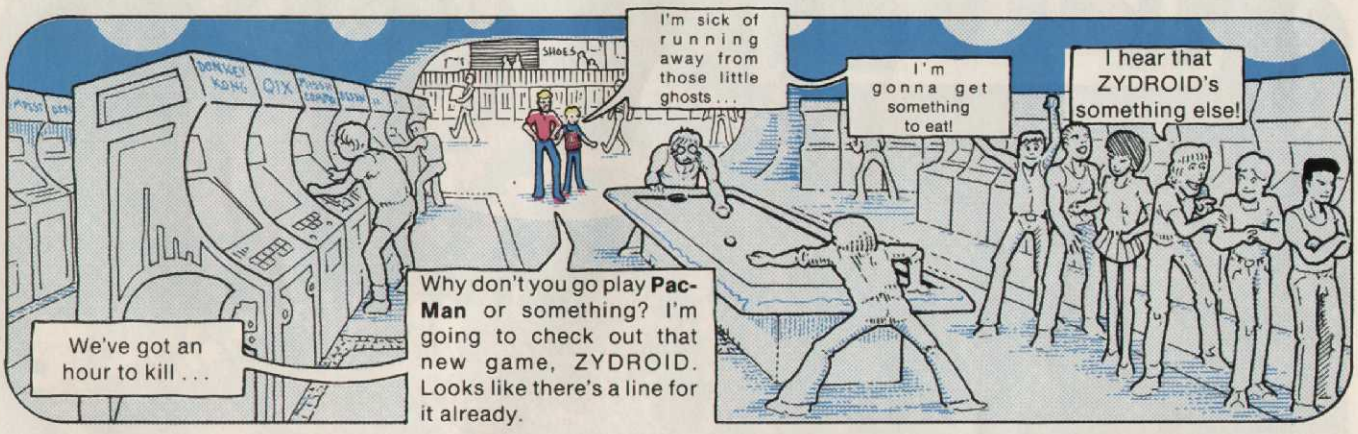
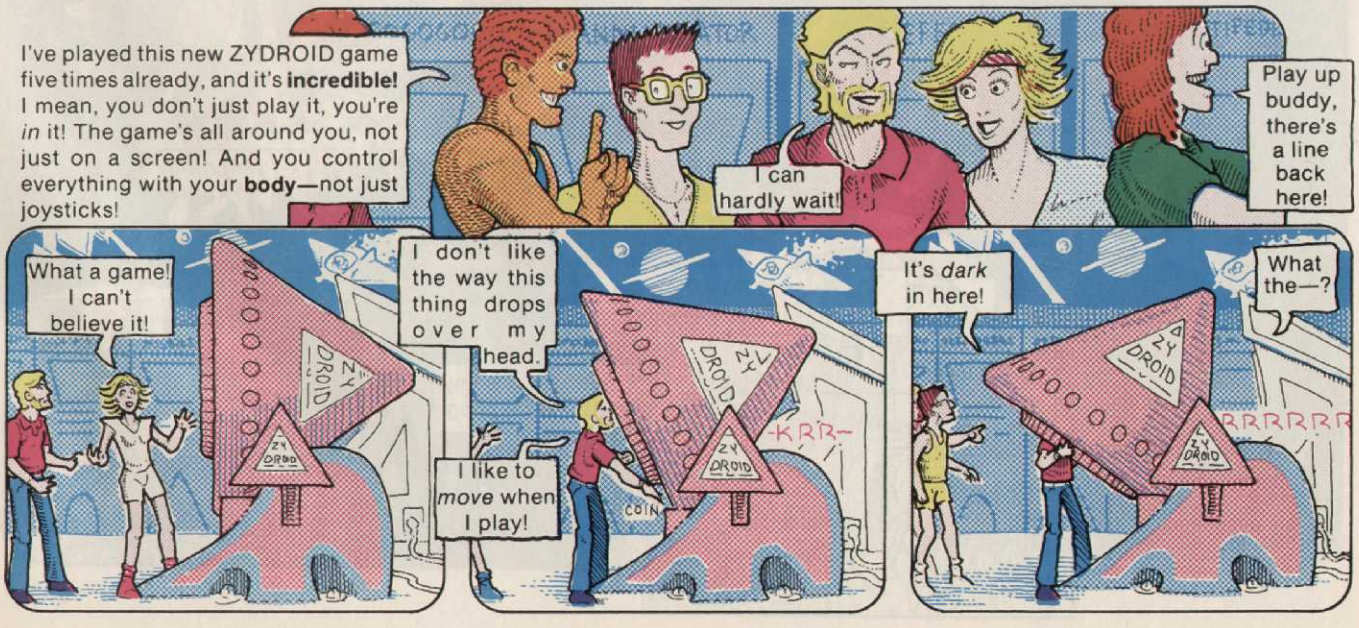
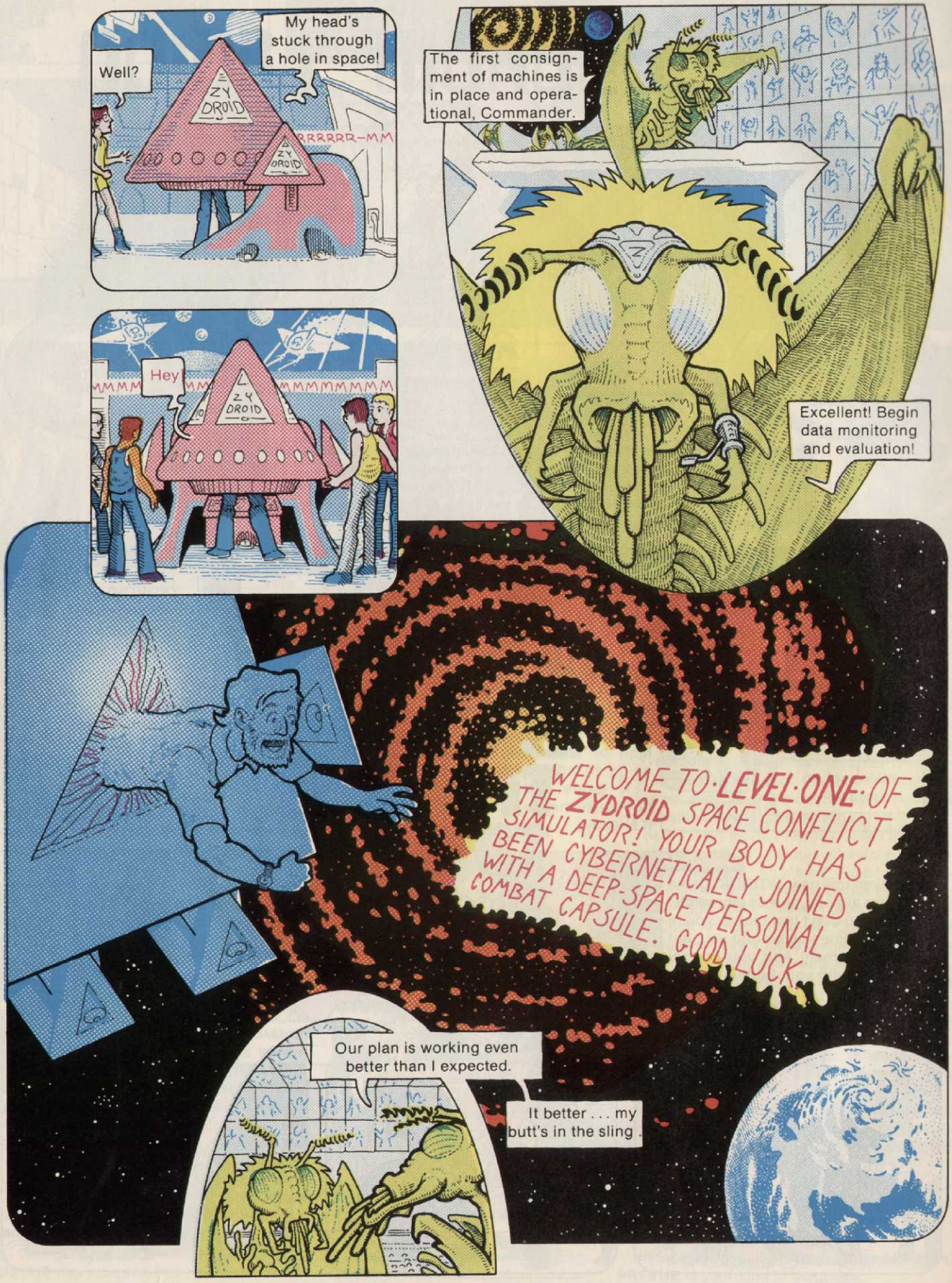
THE ZYDROID LEGION

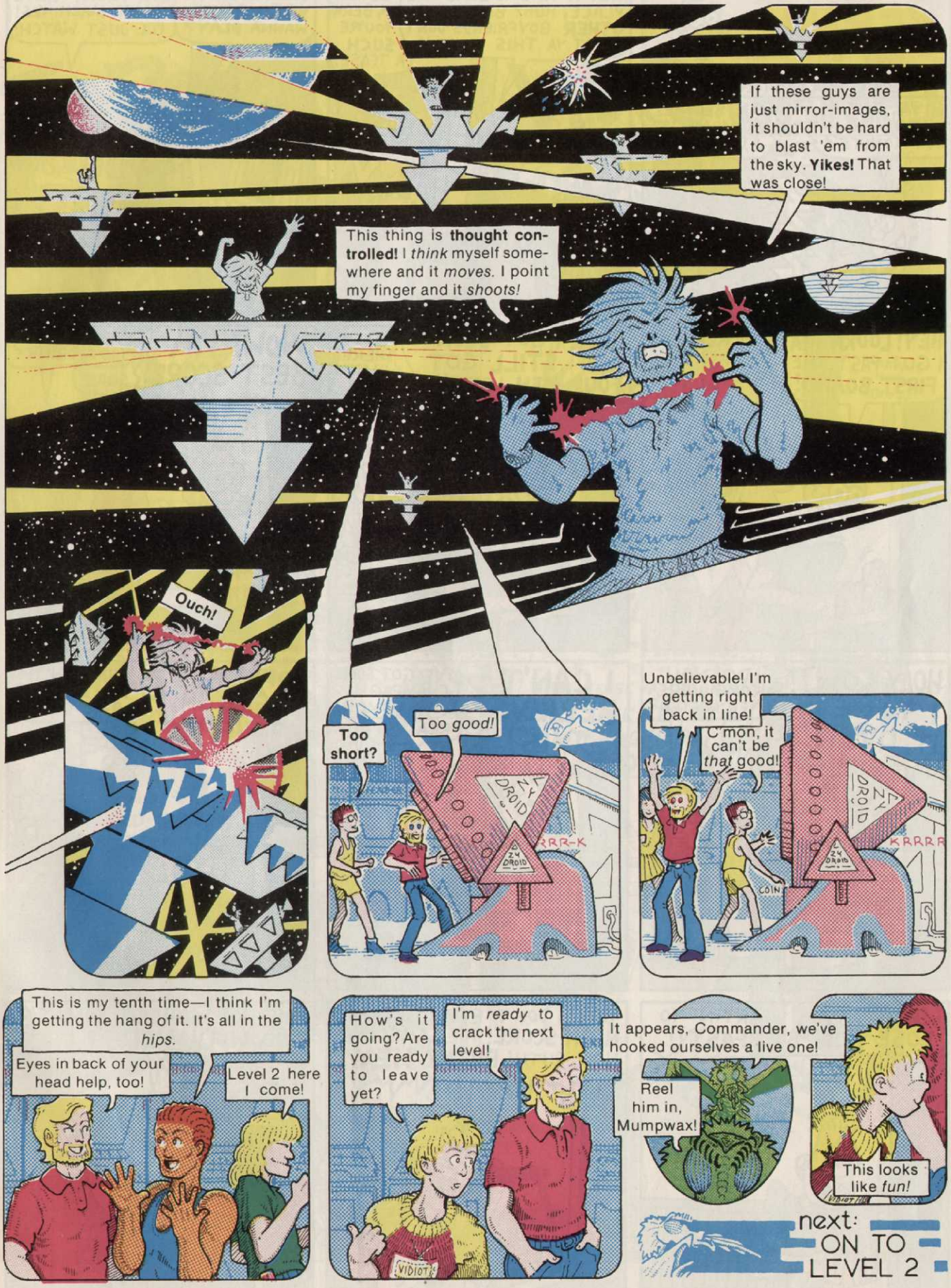


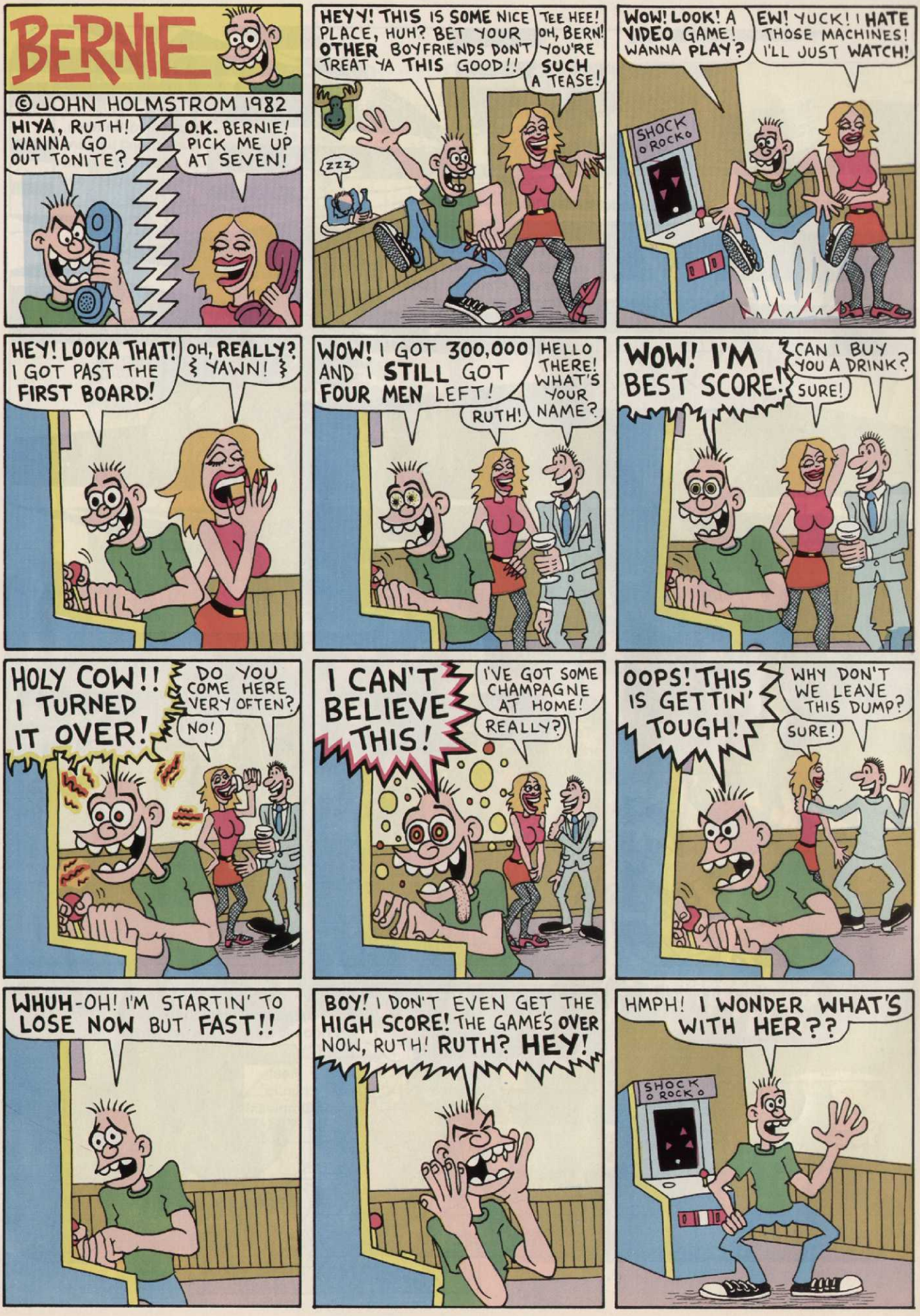
Chapter One: Ever wonder—when a new video game suddenly appears in the arcades—where the damned thing *came* from? Sitting there innocently in the corner . . . flashing, winking and beckoning at you to drop a quarter into its slot. Did you ever think that maybe there was *more* to that machine than met your eye? This is the story of just such a game, and two brothers who perhaps *should* have wondered . . .



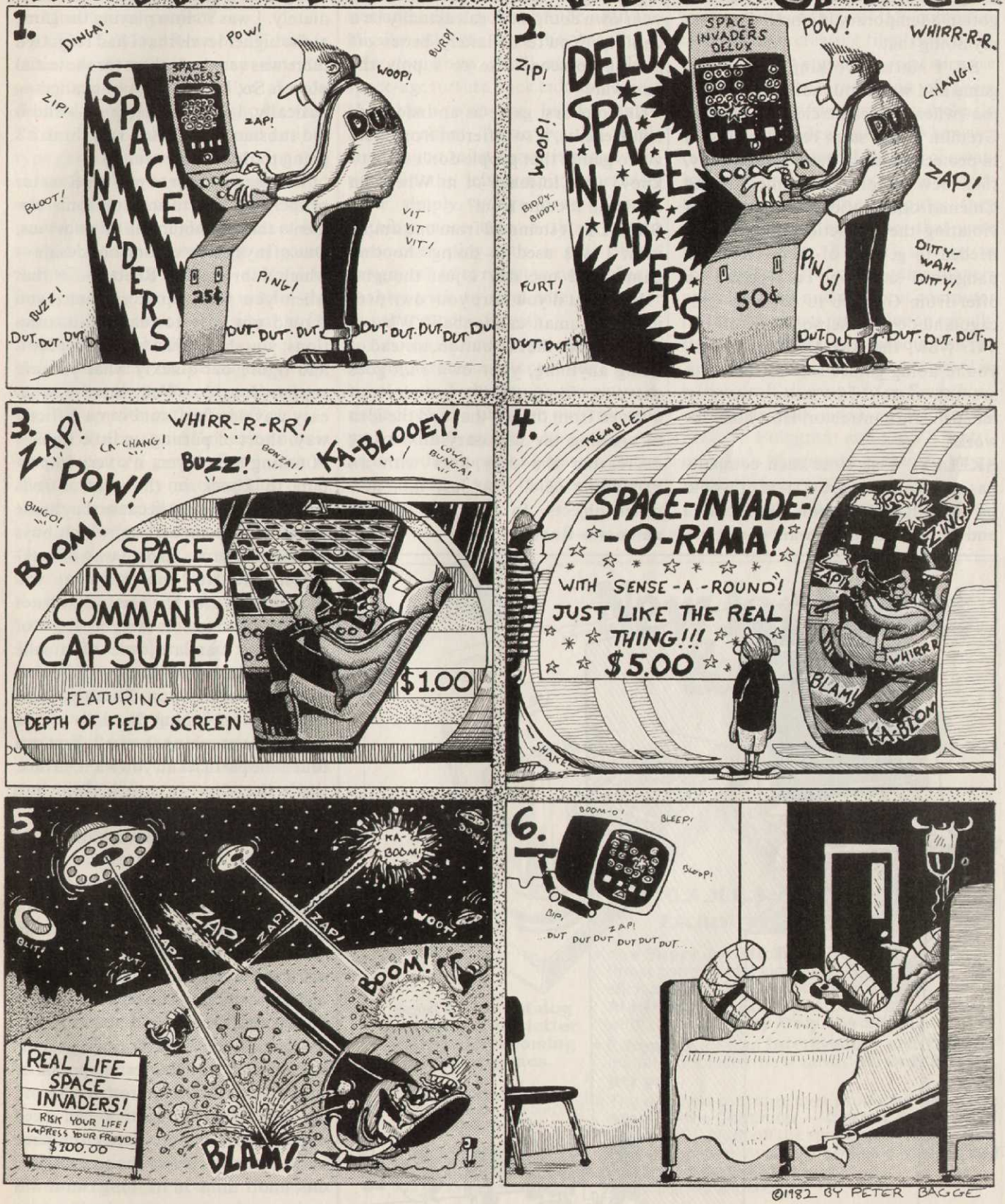



My head's stuck through a hole in space!
Well?
ZY DROID
RRRRR-MM
Hey!
MMMM
The first consignment of machines is in place and operational, Commander.
Excellent! Begin data monitoring and evaluation!
WELCOME TO LEVEL ONE OF THE ZYDROID SPACE CONFLICT SIMULATOR! YOUR BODY HAS BEEN CYBERNETICALLY JOINED WITH A DEEP-SPACE PERSONAL COMBAT CAPSULE. GOOD LUCK.
Our plan is working even better than I expected.
It better . . . my butt's in the sling.


If these guys are just mirror-images, it shouldn't be hard to blast 'em from the sky. **Yikes!** That was close!
This thing is **thought controlled!** I *think* myself somewhere and it *moves.* I point my finger and it *shoots!*
Ouch!
ZZZZ
Too short?
Too *good!*
Unbelievable! I'm getting right back in line!
C'mon, it can't be *that* good!
This is my tenth time—I think I'm getting the hang of it. It's all in the *hips.*
Eyes in back of your head help, too!
Level 2 here I come!
How's it going? Are you ready to leave yet?
I'm *ready* to crack the next level!
It appears, Commander, we've hooked ourselves a live one!
Reel him in, Mumpwax!
This looks like *fun!*
next: ON TO LEVEL 2


BERNIE
©JOHN HOLMSTROM 1982
HIYA, RUTH! WANNA GO OUT TONITE?
O.K. BERNIE! PICK ME UP AT SEVEN!
HEYY! THIS IS SOME NICE PLACE, HUH? BET YOUR OTHER BOYFRIENDS DON'T TREAT YA THIS GOOD!!
TEE HEE! OH, BERN! YOU'RE SUCH A TEASE!
ZZZ
WOW! LOOK! A VIDEO GAME! WANNA PLAY?
EW! YUCK! I HATE THOSE MACHINES! I'LL JUST WATCH!
SHOCK O ROCK O
HEY! LOOKA THAT! I GOT PAST THE FIRST BOARD!
OH, REALLY? } YAWN! {
WOW! I GOT 300,000 AND I STILL GOT FOUR MEN LEFT!
HELLO THERE! WHAT'S YOUR NAME?
RUTH!
WOW! I'M BEST SCORE!
CAN I BUY YOU A DRINK?
SURE!
HOLY COW!! I TURNED IT OVER!
DO YOU COME HERE VERY OFTEN?
NO!
I CAN'T BELIEVE THIS!
I'VE GOT SOME CHAMPAGNE AT HOME!
REALLY?
OOPS! THIS IS GETTIN' TOUGH!
WHY DON'T WE LEAVE THIS DUMP?
SURE!
WHUH-OH! I'M STARTIN' TO LOSE NOW BUT FAST!!
BOY! I DON'T EVEN GET THE HIGH SCORE! THE GAME'S OVER NOW, RUTH! RUTH? HEY!
HMPH! I WONDER WHAT'S WITH HER??
SHOCK O ROCK O

The PROGRESS of VIDEO GAMES



©1982 BY PETER BAGGE

Skelly

(Continued from page 23)

us out of using the vector. Though eventually the suit was dropped, at the time I had to stop working on the vector game because Cinematronics had gotten a temporary injunction against my doing that.

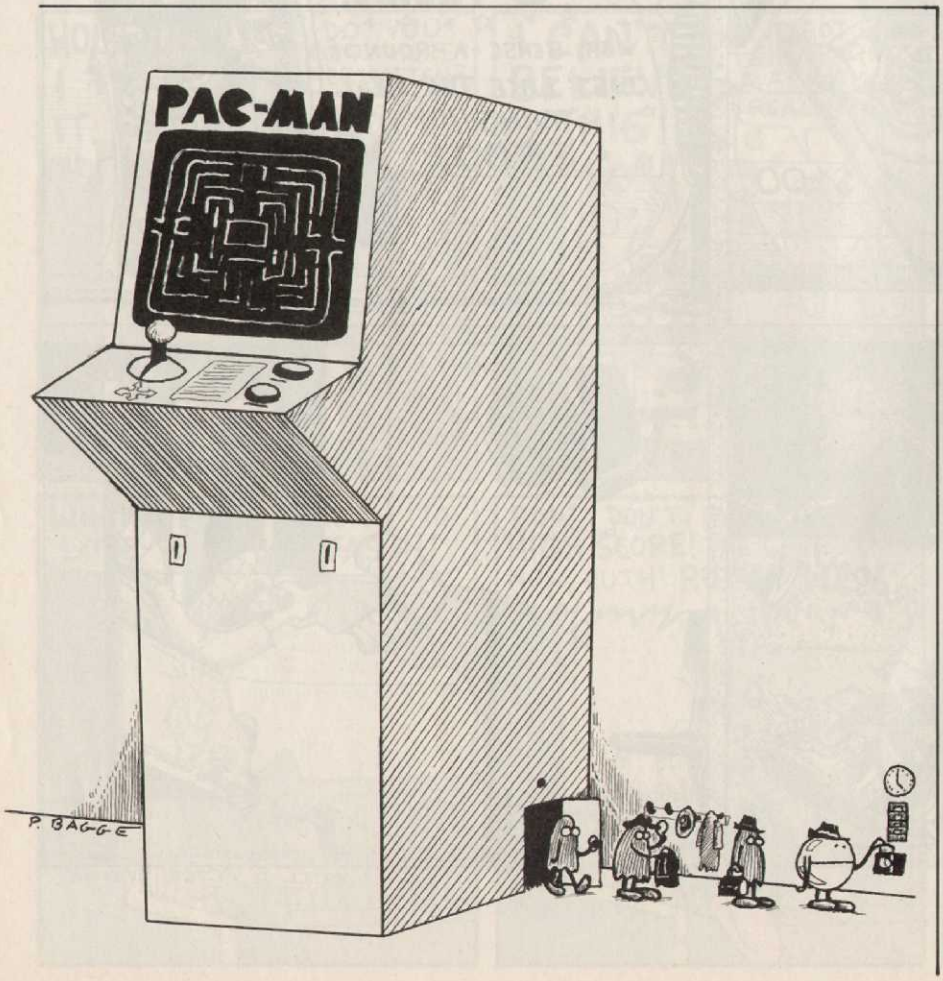
So, I started working on a raster game and was about halfway through that when it became clear to me that Gremlin didn't seem really interested in protecting me in the event that, say, their new vector game came out and Cinematronics decided to accuse me of violating the injunction. I just felt I needed to get out of there—it was a dangerous situation. I'd received an offer from Gottlieb to come to Chicago and do a game, so I took off.

VG: Now, the way I understand it, you're doing games for Gottlieb, but are not on staff. In a sense, you're an independent contractor. How does this work?

SKELLY: Well, since each company has its own hardware system, it would be difficult to do a game from scratch and then sell it. I don't want to do that. Being an independent simply amounts to my having my own computer, which I can hook up and adapt to everybody else's hardware, and then contracting with a company for x number of games. With the state of the art moving along as fast as it does, owning your own equipment can actually be a liability. You're definitely better off getting someone else to supply the hardware.

VG: Your first game as an independent, Reactor, is so different from most video games that people don't seem to know what to make of it. Where on earth did it come from?

SKELLY: It stemmed from one simple idea. I was used to doing shooting games and one day I just thought: "Hey, what if you were your own projectile? Human cannonball? What if when you hit the fire button, instead of firing anything, your own *ship* goes shooting forward?" It just sort of evolved from there—that and the idea of creating the necessary anxiety by decreasing the play area with an expanding core. You just ram into other objects. In fact, the original name was Ram-It.



VG: I've played Reactor and I love it. But I'm not the masses . . . well, let's face it, the game hasn't been doing so well, has it?

SKELLY: The initial tests were very bad, but the things that led to them being bad I corrected almost immediately. I was so into playing the game at the higher levels that I had forgotten there was very little there for the initial player. So, I made a lot of changes—basically, I sped the game up—and it did substantially better. I do think it's going to do well eventually.

You see, in order to pull off Reactor properly, I had to include some elements that are not intuitively obvious. One of my first rules for game design—which I broke for Reactor—is that when you walk up to a game, you should not have to read the instructions; you should just be able to play it and figure out quickly what you are supposed to do. Well, there was no easy way—in fact, not even a difficult way, short of putting up little signs—of telling the players it's very important to knock in the control rods (video drop targets) because they make the core stop expanding, which buys you time. There's also no way of making it intuitively obvious that you should chase after the particles and not wait for them to come to you. Reactor violates a standard rule of arcade xenophobia, which is: Anything that touches you, kills you. That's not true here. The only thing that kills you in Reactor is touching the wall. You can touch the particles all you want; in fact, that's the idea—to smash them into the wall.

VG: How did Gottlieb react initially to the poor test results?

SKELLY: Well, it's the hit syndrome. If you haven't got something that's number one in the arcades immediately, the company wants to back off. I can understand that because an operator—the guy who buys the game—invests real money, and he has to pay interest. And if he doesn't get the money back within a certain period of time, what with the interest, he can end up hopelessly in debt. I can even understand *that*. Fortunately, the game has done much better the second time out, and I think in the long run it will do better than just good. At this point I'm philosophical about it. But, back then, of course, I was pretty upset:

Reactor took nine months out of my life.

VG: It's easy to see how the hit syndrome—the need to cash in, even to the point of copying an existing game—can stifle experimentation. How will this experience with reactor affect your next game project?

SKELLY: With Reactor, I had a chance to do something experimental and I enjoyed it. But, I've already decided that next I'm going to do what I know best—which is a real action-type game. So far we've had Japanese cartoon games based on humor and we've had adventure-excitement games. I think it might be a lot of fun to do a monster-movie type of game: Something that's scary *in addition* to being exciting. Something not for the squeamish. I don't know whether I'll be able to pull it off.

VG: While we're on the subject of new ideas, what do you see the other guys coming up with in the future?

SKELLY: One trend I'm seeing now is toward pattern games. For instance, Zaxxon has really neat graphics, but it goes back to the Space Invaders thing. One of the major innovations of Space Invaders was that it introduced the concept of "Gosh, I could've played *forever* if I had just had it together, if I had just zigged instead of zagged." That's what happens in Zaxxon. Even though it's a shooting game, Zaxxon is probably closer to Pac-Man than it is to Defender. It depends a lot less on marksmanship than on remembering when to dive, when to pull out and so on.

I'm afraid that what I see in the future is a heckuva lot more mundane than what most people come up with. I think that imaging will become a lot more realistic; that's been the trend all along. As a result of that, I'm sure there will be a lot more simulation games, like Battle Zone. Other than that, video games are just here to stay. Whether or not they're still in arcades, or are going to be computer-matrixed to homes, that's all just details. The fact is, they're fun, they're a totally new form of entertainment, and they are here to stay.

There are certainly fad aspects to it—for instance, Pac-Man. Pac-Man is the Uncle Miltie of video games. Years from now, people will fondly remember ol' Pac-Man.

Coin-Op

(Continued from page 63)

trified fences and keyhold slots must be navigated. Since it's often hard to tell exactly where your ship is heading, try firing missiles at an oncoming barrier and adjust your altitude until the missiles slip through the opening—now you know you'll make it. This space-age torture track culminates in a showdown with the highly touted Zaxxon robot. To survive this "challenge," you must shoot it exactly six times in the left armpit; otherwise, quite simply, you're dead. This is nothing more than a thinly veiled game-over ploy. It's a pity Sega's designers had to resort to such a cheap, shabby trick to terminate the game. But that's video for yah.

Zaxxon is a fun, graphically exciting (though sometimes confusing) flying simulation. Even though the player is ripped-off, the pleasure overrides the pain, at least initially. As a game, it's an underdeveloped blip blaster. If that really bothers you, then go design a game of your own.

Video Movies

(Continued from page 28)

"As artists learn a little more about the machinery, and the machinery gets so simple that you can eliminate the middleman—the programmer—artists will start sitting down at the computer terminal and creating films directly."

It shouldn't come as a great surprise that during the production of *Tron*, the cast and crew became hopelessly hooked on video games. Whenever taking time off from the rigors of creating or acting out roles in the forbidding world inside the computer, they were playing actual games that were installed off-set. Kroyer's interest in the psychology of video game players as well as new and different computer image techniques intensified so rapidly that even before post-production on *Tron* was completed, he had turned in a first-draft screenplay for *Spaceblasters*, a second video game-oriented flick, to Polygram and CBS Theatrical. Both companies agreed to buy a piece of the action.

Like *Tron*, *Spaceblasters* will com-

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bine live-action with computer-generated images and other special effects techniques, including lasers. Current plans call for four different styles of computer animation to earmark four separate sequences in the film. However, unlike *Tron*, the heart of *Spaceblasters* will be its characters.

Says co-producer Adam Fields: "It's the story of four typical American teenagers, who are video game fanatics despite the wishes and desires of their families. Through a certain circumstance of events, they are called upon to save the world. It's every kid's fantasy."

Among the first to join the *Spaceblasters* crew was "science advisor" and Tempest devotee Timothy Ferris. An astronomer, author (*Galaxies* and *Red Limit*) and former science editor at *Rolling Stone*, Ferris has been giving a lot of thought to the film's sets and designs.

"To make an advanced set that, in a sense, really does work—or that *thinks* it works—is an approach I'm very interested in," he says. "I'd like to get more integrity into the design. For instance, when people try to make spaceships, the reason they most often fail is that the spaceship doesn't actually work. I know that sounds like a silly thing to say—you're not going to build an actual spaceship—but if you design a set from ground up, meaning you sit down with an engineer and justify everything you've done in terms of how that set would work, then it ought to look like something. I want to build sets that *think* they work."

With *Tron* already in the theatres and *Spaceblasters* on the horizon (look for it this Christmas), what are our video game film pioneers forecasting for the future? Kroyer expects a "whole raft" of game-type movies to appear if *Tron* takes off. "I think that just for commerical purposes, Hollywood will jump on the bandwagon."

"Movies and video games are going to get closer and more interrelated. I definitely think so," says Lisberger. "The different technologies used to design video game graphics and to make some of the computer visuals in *Tron* are merging together."

Notes Adam Fields: "I think film people have finally realized that video games are more than just a fad, it's an industry that's here to stay. Rather than competing with it, they're beginning to capitalize on it. It's a perfect, ideal marriage."

A wedding between movies and video games, created in sparkling, computer-generated visuals. Seventy-millimeter and in Technicolor. But, if all of this is so perfect, then why is Steven Lisberger unhappy? Apparently, the director has detected a flaw in his $19 million celluloid package.

"I think the biggest problem with *Tron* as far as video game people are concerned—and I wish I could do something about this—is that the audience has no control over the film. I wish that every seat in the movie theatre had a joystick next to it so people could literally take part in the film."

Walt Disney Productions has already announced *Tron II*. Perhaps Lisberger will soon get his wish. ▲

Coleco

(Continued from page 55)

"Atari suffered horrendous losses in video as a number of us did," he says tactfully. "Atari found it necessary to be acquired by Warner (Communications) in order for it to survive. Warner showed great confidence in Atari and pumped in money, but it wasn't until 1980 that Warner was convinced it did the right thing."

That same year Intellivision was unveiled, and many have since agreed that Mattel did the right thing. Now, two years hence, during the midst of a fantastic video games boom, comes ColecoVision. Will it, *too*, be the right thing?

"I believe ColecoVision is going to have an extraordinarily positive impact in the marketplace," responds Greenberg, as only the president of a company touting his own product could. "The graphics are not merely superior to Atari's, but significantly superior to Mattel's. But, the critical element about ColecoVision is its modular expandibility—the ability to accept state of the art as it comes along.

"Both Atari and Mattel, in my opinion, have gotten themselves into a difficult market position. Atari has to take the difficult to sustain point of view that games are one thing and

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computers are another; that's because the VCS is not expandable and Atari can't make a computer out of it. Mattel is substantially in the same place. It's attempt to develop Intellivision into a computer has resulted in a very high-priced keyboard, which I believe will be abandoned—if it already hasn't been—by the end of the year.

"What *we* have done by waiting a few years to introduce our product is creatively take advantage of state-of-the-art changes in technology. This is important because there is a great deal more mass-market interest in the personal computer now than most people had anticipated."

What Greenberg is getting around to is Coleco's resolve to market a keyboard (Module #3) some time next year. "We're talking about the next level of sophistication in terms of games," he goes on. "It's very, very important, we think, to approach the personal computer market from the standpoint of a toy and game company, rather than a heavy technology company. The housewife, the husband and teenagers at home are primarily not interested in RAM and ROM."

Though this last appraisal is debatable, one thing is certain: The consumers will soon enough be crying out for more sophisticated software. What does Coleco have in mind?

"I strongly believe," Greenberg says, "the industry will only be as big and healthy as there is creative and abundant software. We may not be selling the Donkey Kong cartridge in great volume two or three years down the road . . . it may be some other arcade game, a film title, or an amusing educational program. Or it could even be some kind of a more interactive device."

In the meantime, Coleco is continuing to bargain for the rights to the hottest coin-op properties. However, diving into an area where Atari previously enjoyed carte blanche can be precarious—as Coleco quickly found out. When the company formally announced the ColecoVision venture last January at the winter Consumer Electronics Show, it claimed one of its licensers was the Florida games firm, Centuri. But, several months later, Atari publicized *its* agreement with Centuri. Coleco, apparently, had been had.

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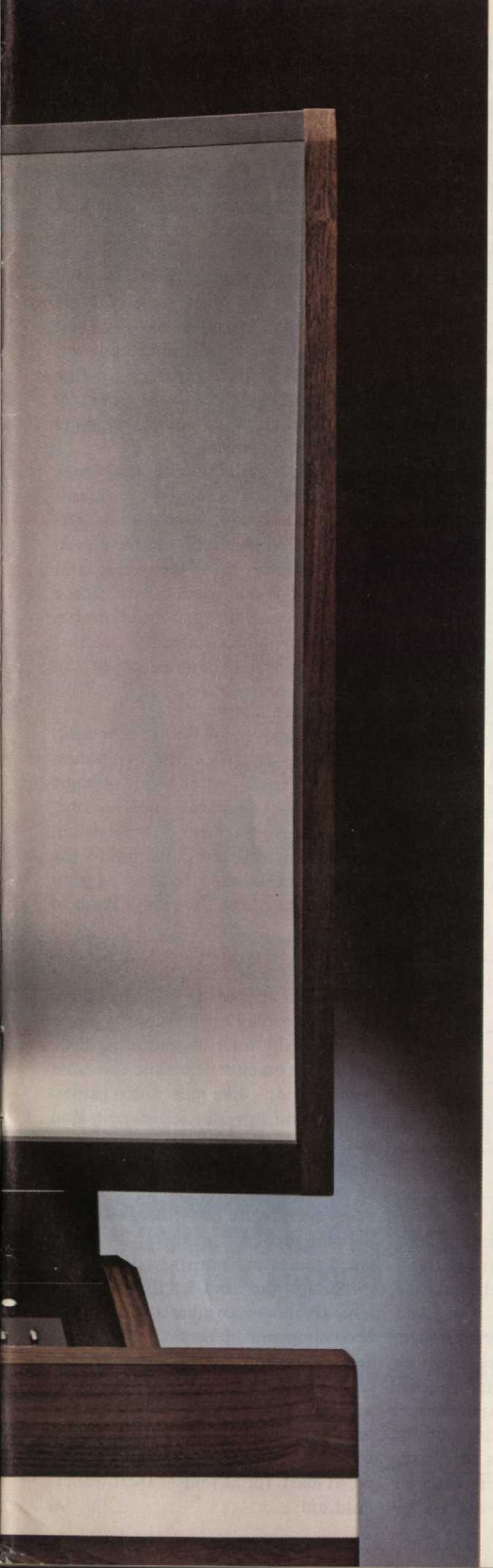

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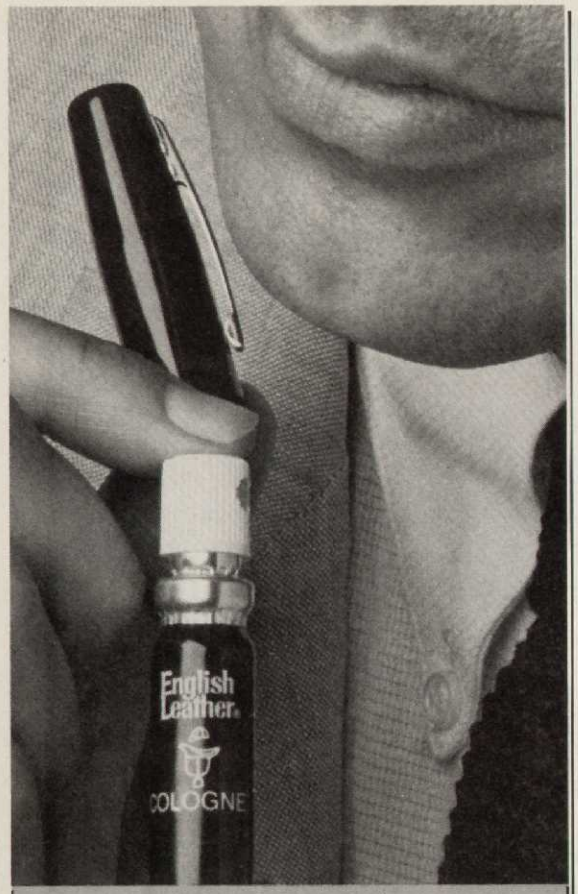

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"It's a very simple thing," explains Greenberg cooly. "We had concluded a fully defined agreement based upon meetings I had with the principals. There was, in effect, a three-page letter summarizing the terms. During the interval of two to three weeks from the time of the letter to the closing, Atari zoomed in and appeared to put more gold in the palm of Centuri, who then saw fit to breach its agreement with us. It's probably fair to say that the last chapter in that adventure has yet to be written."

If nothing else, this episode should serve as fair (or unfair, depending on whose story you believe) warning to Coleco that the stakes in the TV-games derby are exceedingly high and might grow higher. Even though Coleco seems prepared to pay top dollar for the best licenses around, some Wall Street analysts are already hedging their bets. Growled one: "I'd rather not talk about Coleco. This is not its first big splash and it won't be its last."

And according to another, David Liebowitz at American Securities Corporation, "There's a great dichotomy on Wall Street about Coleco—some say, 'Buy now,' others say, 'Get out.' I think people are generally questioning the growth potential of this industry, but it's not often that opinions about one company are so firm on both sides."

Again, Greenberg hardly bats a lash. "One of the most significant things that has happened in the marketplace for a considerable period of time is ColecoVision," he says, as if reading from a script. "I think by the time this interview is in print the fact will have dawned upon not only the consumers, but our competitors as well." ▲

Hard Sell

(Continued from page 66)

Space Armada a more interesting game than Space Invaders or Astro Battle is debatable, but they definitely make it a more varied and difficult task. And that's the point. Mattel's designers appear not to be satisfied creating simply another tank game, another auto racing game, another space game; instead, they embellish their creations with operational variables and strategic complexities that, for better or worse, put the games in a class by themselves. Intellivision requires a commitment—in other words, plenty of study and practice. But Intellivision's worth it—even if you master it.

Graphics and Sound Effects

The graphics and sound effects of certain Intellivision carts, like PBA Bowling, NHL Hockey and Sea Battle, are among the very best available for TV play. No other game matches the authentic close-up of your ball toppling the pins in Bowling, and even in their less impressive cartridges, like Star Strike and Las Vegas Poker & Blackjack, Intellivision's designers never stint on effects.

Perhaps because the company dates back to the earliest days of programmable video systems, Astrocade's cartridges are considerably more uneven in this regard. But, the sights and sounds of recent games, like Space Fortress, Star Battle and the yet-to-be-released Munchie, are of superior quality, especially compared to the rather ordinary Grand Prix, Sea Wolf or Dodgem.

One thing is clear: With competition heating up and with new companies like Activision, Apollo and Imagic challenging the status quo, no one, including Astrocade and Intellivision, is releasing any new game unless the graphics and sound effects are as good as the state of the art allows them to be.

Conclusion

Whereas Astrocade is a better piece of hardware than Intellivision, its games are generally inferior, requiring little more than quick reflexes and eye-hand coordination—like most video games. Intellivision, however, is different. You don't sit down and immediately play one of its games. Give yourself a good 45 minutes to an hour to learn the rules, *then* figure out strategies. Intellivision proves that there's more to video games than pressing a fire button.

Though the libraries for both systems are modest compared to all that is becoming available for the VCS (Coleco and Activision will soon be making cartridges for Intellivision), Astrocade and Mattel do provide a varied enough selection of games to keep their customers satisfied for a good long time—or, at least, for as long as their wallets hold out. ▲

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